Navy Civil Engineer

Spring 1988

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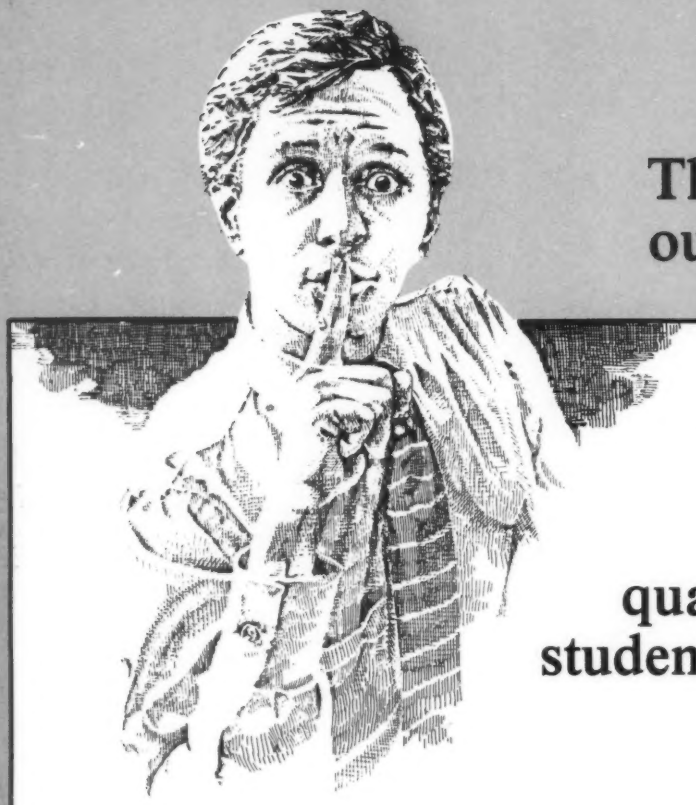

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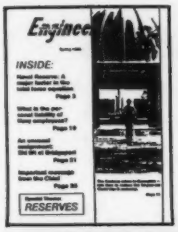

The photo on the cover of this issue was snapped by journalist JOCS B. A. Cornfeld who works out of Pearl Harbor, Hawaii. Her story, which is featured on page 11, describes the restoration of the War Memorial on Corregidor by NMCB-74's R.P. Subic Bay detachment.

Navy Civil Engineer

SPRING 1988 Vol. XXVII, No. 4

FEATURES

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The *Navy Civil Engineer* is intended for the information of regular and reserve personnel of the Civil Engineer Corps, United States Navy, and key civilian employees of the Naval Facilities Engineering Command, subordinate commands, and other mission-oriented activities.

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Issue	Theme	Material Due	Distribution Date
FALL 1988	Public Works	July 15, 1988	Oct. 1-15, 1988
WINTER 1988-89	Seabees	Oct. 15, 1988	Jan. 1-15, 1989
SPRING 1989	Contracting	Jan. 15, 1989	April 1-15, 1989
SUMMER 1989	Environment	April 15, 1989	July 1-15, 1989

situation report

The Naval Facilities Engineering Command (NAVFAC) established a contracts office (code 27) in January 1988 at the Naval Construction Battalion Center (NCBC) in Port Hueneme, Calif. This new department-level organization consolidates NAVFAC procurement functions for the Naval Civil Engineering Laboratory, the Naval Energy and Environmental Support Activity (NEESA) (service requirements only until March), and Port Hueneme Public Works.

By March 1988, additional acquisition functions in support of the Civil Engineering Support Office and NEESA, previously performed by the Procurement Contracting Office, Davisville, R.I., was also incorporated within the consolidated office. The Davisville procurement function will phase down operations and support only traditional East Coast customers.

Command and control of the new contracts office rests with the commanding officer of NCBC Port Hueneme; contracting authority and technical guidance comes from NAVFAC's Deputy Commander for Contracts (code 02). The benefits of these changes are:

- NAVFAC activities on the Oxnard Plains (Port Hueneme area) will become more self-sufficient in contracting for services and supplies, lessening their dependence on distant regional contracting offices that serve numerous customers.
- By moving Davisville West Coast procurement support to Port Hueneme, we will co-locate the engineer with the buyer, improve communications, and enhance the decision process.
- Overall, our aim is to consolidate and apply our minimal resources to speed up the procurement process and make it responsive to NAVFAC customers and NAVFAC priorities.

Construction and other land-altering projects can be, and have been, stopped or delayed by inattention to legal requirements protecting wetlands. Costly construction/project disruptions, fines, and court-ordered mitigating work can be avoided with help from natural resources management experts at your supporting NAVFAC engineering field division (EFD).

Wetland areas are frequently not apparent to a project site selector. Federal regulations establish criteria for legally defined wetlands. In many instances, a "legal" wetlands may not fit your image of an unusually wet area. In order to help installation and other project planners know where wetland boundaries are located, NAVFAC EFD natural resouces management branches are initiating wetland inventories on Navy lands.

Identification of a wetland does not automatically prohibit all future ground disturbance. If there are no practical alternative sites for essential construction, a permit for alteration of a wetland is possible under Section 404 of the Clean Water Act.

Contact your EFD natural resources management personnel for additional information concerning wetlands and the permitting process.

The Mobile Training Laboratory (MTL) program is a concept for delivering cost-effective training in the use of self-contained breathing apparatus, search and rescue procedures, and hazardous materials incident response training. The MTL program provides self-contained physical facilities for conducting specialized training for Navy fire service personnel that can be easily transported from Navy activity to activity within a given geographical region.

The MTL program is a unique program incorporating a self-help concept at the activity level with technical and financial support from NAVFAC. The first MTL unit was developed by the Federal Fire Department San Diego for training personnel in utilization of self-contained breathing apparatus and search and rescue procedures. Additional MTL units of this type are under construction at NAS Alameda, NAS Glenview, NETC Newport, NAS Pensacola, and Philadelphia Naval Shipyard.

The MTL-HAZMAT is believed to be the first of its kind ever developed for the training of emergency services personnel in hazardous materials incident command and control, hazardous materials identification, and hazardous materials leak and spill control. The MTL-HAZMAT contains a classroom that depicts a command post or control center, equipped with the latest state of the art in communications equipment, hazardous materials references, hazardous materials training resources, and hazardous materials inventories at selected naval activities.

Surplus 40-foot van trailers have been donated to the Navy for construction of MTL units at SUBASE New London, Philadelphia Naval Shipyard, and Naval District Washington.

The Mobile Training Laboratory program is a cost-effective and efficient concept in maintaining the highest levels of proficiency in Navy fire departments.

United States Naval Reserve

By CDR DAVID R. FRITCHEN, CEC, USN
Head, MCNR Budget Branch
Director of Naval Reserve
Chief of Naval Operations
Washington, D.C.

A major factor in the total force equation

Today's Naval Reserve has an indispensable role in maintaining the Navy's total readiness and operational capability. The Naval Reserve mission is to provide trained units and qualified individuals for active duty in time of war or national emergency, and at such other times as national security requires. In recent years, the Naval Reserve has shouldered an increasing share of the Navy's responsibility in peacetime as well as its wartime mission capability.

The Navy's goal of a 600-ship, 15-deployable-carrier battle group force is necessary for the success of the nation's maritime strategy. The Secretary of the Navy and the Chief of Naval Operations are committed to improving the readiness and sustainability of the Naval Reserve so it can be a more effective part of this strategy.

For example, by the early 1990s one of every 12 Navy ships will be in the Naval Reserve, and the two reserve carrier airwings are being modernized to ensure deployability aboard any Navy aircraft carrier.

The Naval Reserve's goal is stated simply: to be trained and ready for mobilization, to be part of the Navy that wins the war at sea.

Training for mobilization is the primary mission of the Naval Reserve in peacetime. The Naval Reserve provides the only trained manpower source capable of rapidly augmenting active Navy forces. Its units and individuals fill the gap between peacetime capability and wartime requirements.

People are the Naval Reserve's most important asset. As of June 1987, there were more than 426,000 Naval Reservists, officer and enlisted. Included in this number are more than 289,000 "ready reservists" who are on active duty or who are liable for active duty in time of war, during a national emergency declared by Congress or proclaimed by the President, or when otherwise authorized by law.

The Naval Reserve also includes more than 125,000 "retired reservists," and more than 11,000 "standby reservists." Both retired reservists and standby reservists are liable for active duty only in time of war or national emergency declared by Congress or when otherwise authorized by law.

All reserve manpower is assigned to one of three reserve component categories — the ready reserve, the standby reserve, and the retired reserve. (10 U.S.C. 276 (A)) (Figure 1)

THE READY RESERVE

The ready reserve is made up of reservists on full-time active duty and those in an inactive duty status. In June 1987, more than 84,000 of the more than a quarter of a million ready reservists were on full-time active duty. This includes 2,000 commissioned officers and more than 18,000 enlisted personnel who are career active duty reservists assigned to the Training and Administration of the Reserve (TAR) program.

TAR strength is programmed to grow to about 21,000 by the end of this decade. Much of this growth is associated with ships and aircraft for the expanding Naval Reserve, as well as personnel for medical support, in-shore undersea warfare, and Shore Intermediate Maintenance Activities (SIMAs).

The balance of reservists on full-time active duty includes several different categories. Some reservists have been voluntarily recalled to active duty for a specific assignment in support of the active force or reserve component, including approximately 1,300 reserve recruiters.

Some 19,500 officers are serving their initial active duty after receiving a reserve commission, primarily through the Navy's Officer Candidate School. Over 43,000 enlisted reservists (active mariners) are serving a three-year active duty commitment that will be followed by an obligation to train as a selected reservist for two years.

Ready reservists also include those in the selected reserve — reservists who are paid for drills and/or annual active training duty — and members of the individual ready

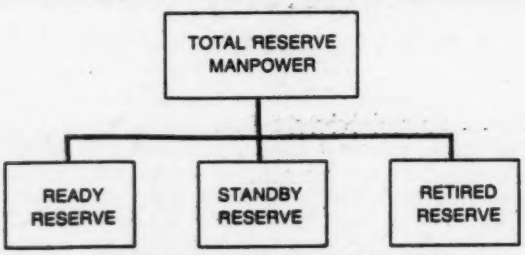


Figure 1. Three Reserve categories.

reserve — reservists who either don't drill or drill without pay. Together, these nearly 210,000 inactive duty ready reservists provide the largest source of reserve manpower for mobilization. These ready reserve members would play a crucial role upon mobilization.

The Selected Reserve

Selected reservists are the core of the Naval Reserve program. These reservists — 148,375 in October 1987 — provide the Navy's source of immediate mobilization manpower. The number of selected reservists is expected to grow to almost 152,600 by the end of fiscal year 1988, and to more than 158,000 in the early 1990s. The requirement for selected reservists, and all other manpower for mobilization, is determined by the Navy Manpower Mobilization System (NAMMOS). This system is based on the analyses of the Fleet Commanders-in-Chief and other major commands' demands for personnel.

Selected reservists perform inactive duty training (normally, at least 48 drills, usually one weekend a month) and two weeks of active duty for training in a pay status each year in order to improve their Navy skills and advance in grade.

In addition to being subject to involuntary recall for war or a national emergency, selected reservists are liable for involuntary recall by the President for up to 90 days to support an operational requirement, without requiring the declaration of a national emergency. The President can extend service for an additional 90 days.

Most selected reservists are Navy veterans who continue their affiliation with the Navy while at the same time pursuing their civilian careers. Some officers obtained their commissions directly from enlisted, veteran, or civilian status as a result of applicable education and experience. Similary, appropriately qualified individuals may be enlisted in advanced pay grades based upon their civilian job and related knowledge and skills.

The Individual Ready Reserve

The Navy's ready reserve includes 77,000 personnel in the individual ready reserve (IRR). These reservists are subject to involuntary recall for war or a national emergency. However, since they do not receive the amount or regularity of training associated with the selected reserve, they are generally not considered capable of meeting the earliest post-mobilization requirements.

Together, with retired personnel and most members of the standby reserve, they constitute a pool of pretrained individual manpower (PIM) to meet later mobilization requirements. About 7,200 members of the Navy's IRR perform voluntary training without pay, usally in volunteer training units (VTUs).

NAVAL RESERVE CONTRIBUTION TO TOTAL FORCE

The impressive growth in Naval Reserve personnel strength and the introduction of modern warfighting assets into reserve inventories are indicators of the great reliance the active Navy is placing on its reserve component. Integration of Naval Reserve units with the active force is being achieved on an unprecedented scale.

In relying on the Naval Reserve to provide units and personnel for immediate mobilization, the Navy has a full spectrum of talent and equipment from which to draw. For example, 100 percent of the Navy's capability is provided by Naval Reserve Combat Search and Rescue (CSAR) squadrons and Mobile Inshore Undersea Warfare Units (MIUWUs). Two of the Navy's 15 carrier air wings are in the Naval Reserve.

Figure 2 provides examples of the degree to which the Navy relies upon the Naval Reserve to provide units and personnel for immediate mobilization and expansion of the active Navy in certain mission areas.

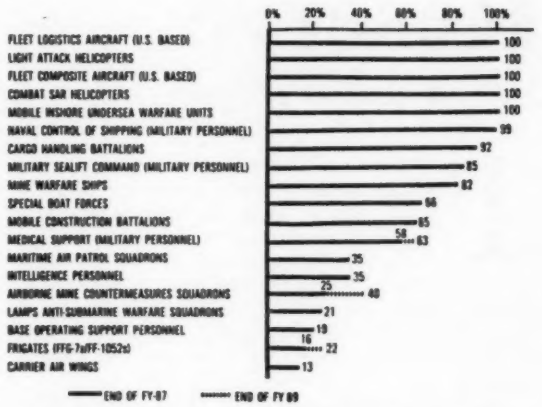


Figure 2. Examples of the Naval Reserve as a percent of the Navy's total capability.

NAVAL RESERVE ORGANIZATION

The Chief of Naval Operations (CNO) is responsible for the organization, administration, training, and equipping of the Naval Reserve and for the mobilization planning to reinforce and augment the active forces.

The Naval Reserve command structure which supports the CNO is headed by a Rear Admiral who holds the positions of Director of Naval Reserve (DIRNAVRES) and Commander, Naval Reserve Force (COMNAVRESFOR). He also holds the title of Chief of Naval Reserve (CNAVRES). The incumbent is domiciled in Washington, D.C., where, in his position as DIRNAVRES, he is the principal advisor to the CNO on Naval Reserve matters. He exercises policy, direction, and control of the Naval Reserve for the CNO (Figure 3). The Director of Naval Reserve also establishes plans, programs, organizational procedures and standards for the Naval Reserve and provides budgetary support for the Naval Reserve command, activities, and programs.

COMNAVRESFOR is a field command headquartered in New Orleans, La. (Figure 4). COMNAVRESFOR is responsible for the administration and management of Naval Reserve programs in accordance with policies prescribed by the CNO, management of assigned resources, and direction and supervision of the management of Naval Reserve activities.

There are two subordinate flag commands co-located

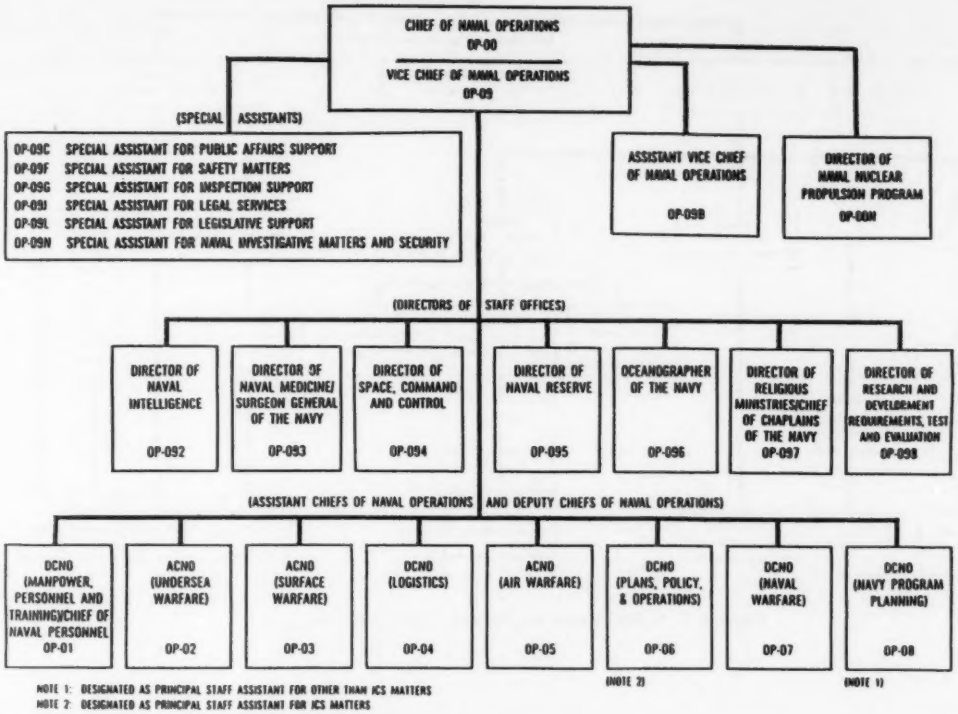


Figure 3. Office of the Chief of Naval Operations.

with COMNAVRESFOR in New Orleans: Commander, Naval Air Reserve Force (COMNAVAIRESFOR) and Commander, Naval Surface Reserve Force (COMNAVSURFRESFOR). They are responsible for their segments of the Naval Reserve Force. The senior of these two commanders also serves as the Deputy COMNAVRESFOR.

Command of Naval Air Reserve Force commissioned units is exercised by COMNAVAIRESFOR through wing commanders. Command of Naval Air Reserve units, other than commissioned units, is exercised through six Naval Air Stations, two Naval Air Facilities, seven Naval Air Reserve commands, and seven Naval Air Reserve Centers.

Command of Surface Reserve units—except for commissioned units—is exercised through 16 Readiness Commanders reporting to COMNAVSURFRESFOR.

Operational and administrative control of Naval Surface Reserve commissioned units is exercised by the Atlantic and Pacific Fleet commanders. Naval Reserve ships are manned by active duty and selected reserve personnel. Within the active duty portion of the crew, a mix of USN and TAR personnel is necessary, since several ratings required for the operation of ships are not TAR ratings.

Also, both the active and reserve components of the Navy benefit from having officers from each component serve occasional tours with the other component, and from having regular enlisted personnel serve on reserve ships. In both cases, personnel bring with them skills learned at their parent components and return with a better understanding of the other component—an understanding to share with their shipmates.

RESERVE NAVAL CONSTRUCTION FORCE ROLE

The Commander, Reserve Naval Construction Force (RNCF) is a subordinate flag command of COMNAVSURFRESFOR and is located in Lenexa, Kans. (Figure 5).

The RNCF is comprised of three major commands: the First Brigade (the Reserve Seabees); the Regional Wartime Construction Manager for the Mediterranean region; and the Reserve Division, Naval Facilities Engineering Command (RDNAVFAC), which augments existing NAVFAC organizations.

The First Brigade, by far the largest RNCF element, is comprised of 17 Seabee battalions, four Naval Construction Force Support Units, eight operational regiments and one training regiment, and the brigade staff. When mobilized, these commissioned units would supplement the nine-battalion active duty Naval Construction Force, and deploy to theaters of operation in support of Navy and Marine Corps forces.

The NCF mission includes advanced base construction, battle damage repair, and facility operation and repair. During peacetime, the reserve battalions and support units are headquartered at permanent drill sites (PDS) located throughout the United States. RNCF units execute a multi-year training program designed to ensure that their personnel have the technical, leadership, and military skills needed for the mobilization mission.

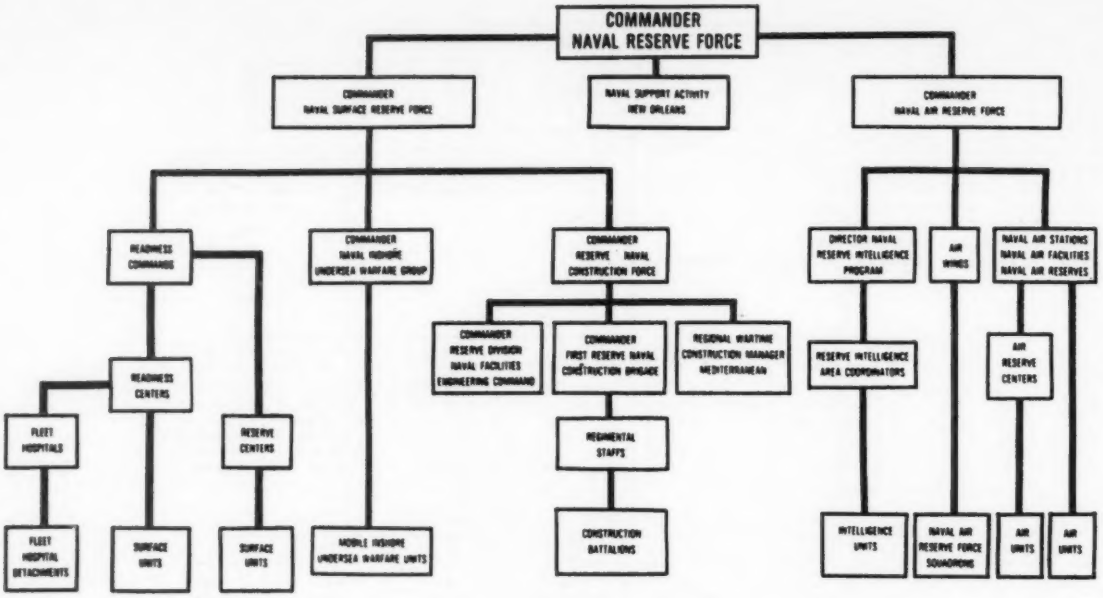


Figure 4. Naval Reserve Force organization.

RDNAVFAC provides the fully trained personnel to augment the headquarters and field activities of NAVFAC upon mobilization. NAVFAC, which is responsible for acquisition, maintenance, and operation of the Navy's shore facilities worldwide, will experience a major increase in workload upon mobilization.

The Commander of RDNAVFAC, a Civil Engineer Corps Rear Admiral, will fill the acquisition officer billet at NAVFAC: the command's other officer and enlisted personnel will augment the six engineering field divisions, three naval construction battalion centers, several officers in charge of construction, and the public works centers, both CONUS and overseas.

Personnel assigned to RDNVAFAC train by assisting with mobilization planning efforts, and providing facilities managment support to COMNAVRESFOR, as well as by completing technical training programs.

In its wartime mission assignment, the CINCUS-NAVEUR Regional Wartime Construction Manager, Mediterranean (RWCM-MED), is responsible for management of construction, repair, and rehabilitation programs throughout the entire Southern European region. The RWCM-MED is an augment unit, which is tasked to coordinate construction-related resources, which include military construction forces (such as Navy Seabees, Army Engineers, and Air Force Red Horse Squadrons) and civilian construction contractors.

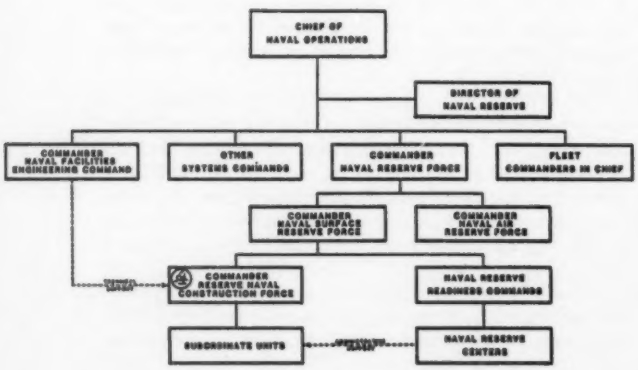


Figure 5. Naval Reserve Constructio' Force command relationships.

A FORCE ON THE MOVE

Today's Navy plays an increasingly important role in strengthening the national defense and supporting our foreign policy. The Naval Reserve is an integral part of this Navy, essential to the accomplishment of its mission. No longer just a force in reserve, the Naval Reserve provides people and equipment to support the Navy both in peacetime and at time of mobilization. The United States Naval Reserve has a proven record of responding to every crisis this nation has experienced. Todays's modernized Naval Reserve stands more ready than ever to answer the call when required. □

LCdr. Marcus M. Kemper, CEC, USN

Naval School,
Civil Engineer Corps Officers
Port Hueneme, Calif.
Specialty: Facilities Planning
Academic Division Director

LCdr. Marcus S. Kemper, CEC, USN, joined the staff of the Naval School, Civil Engineer Corps Officers, in January 1985 as the Facilities Planning Academic Division Director. LCdr. Kemper is director of the following courses: Facilities Planner, Special Projects, Real Estate Seminar, and AICUZ Seminar. Additionally, he is an instructor in the Public Works Management course, and the Civil Engineer Corps (CEC) Basic Officer Qualification course.

LCdr. Kemper received a bachelor's degree in architecture in 1974 from the University of Kentucky, and then went to work for the Navy at Southern Division, Naval Facilities Engineering Command as a Professional Development Center (PDC) intern. He graduated the PDC program in 1976 and went to work at the Southern Division as a planner.

In 1982, LCdr. Kemper received a master's degree in planning and community development, and a master's degree in architecture in urban design from the University of Colorado.

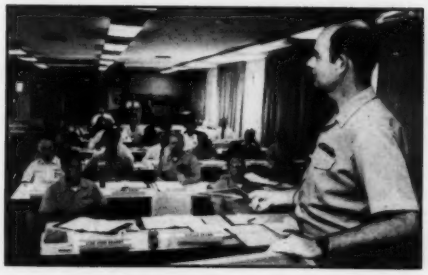
Kemper received a direct commission as an ensign in the CEC in 1977. His past duty assignments have included AOICC/AROICC at the Naval Air Station, Patuxent River, Md; resident officer in charge of construction, Yokosuka; and a planning officer at the Public Works, Yokosuka, Japan.

He is a registered architect in Kentucky and a member of several professional organizations including the American Planning Association and the Society of American Military Engineers. He obtained a private pilot license in 1984, and his other hobbies are computers, racquetball, and photography.

LCdr. Kemper and his wife, Mary, reside in Port Hueneme, Calif., with their two sons, Jason and Nathan.

Naval School, Civil Engineer Corps Officers (NAVSCOLCECOFF) provides courses of instruction for Civil Engineer Corps officers, other naval officers, officers from other Armed Forces, foreign officers, Seabee chief petty officers, and civilian employees of the Department of Defense. Twenty-nine different courses are offered and are designed to respond to the training and development needs of personnel in naval facilities engineering, naval construction battalion operations, engineering management and allied disciplines, and to acquaint them with the specialized administrative and technical information necessary to function effectively in those fields of endeavor.

Making a point.



Any questions?

Government versus A-E

Both have the right to expect professionalism

By CAROL FORD-BENSEN, J.D.
A-E Responsibility Board
Western Division, NAVFAC
San Bruno, Calif.

For decades, it has been the custom for architects and engineers (A-Es) to respond, perhaps overgenerously, when governmental clients advised them that their errors or omissions had caused extra costs to the government.

It was almost a gentlemen's agreement: You take financial responsibility, without admitting fault or negligence, and the government won't pursue the matter further, even if design/engineering services were actually negligently rendered.

Under the old approach, client governmental entities, particularly the federal government, became accustomed to passing on costs of errors or omissions, whether or not the A-E has followed the standard of care reasonable in the circumstances. Also, this approach ignores the fact that the A-E is not to be the insurer of the design. There is no strict liability for design errors and omissions.

The A-E is financially responsible if it has breached the contract or been negligent in performance. The design contract addresses the legal problem in the standard language of the contract clause employed in the design services agreement (1975 APR). It states:

(a) The Architect-Engineer shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by the Architect-Engineer under this contract. The Architect-Engineer shall, without addtional compensation, correct or revise any errors or deficiencies in his designs, drawings, specifications, and other services.

(b) Neither the government's review, approval, or acceptance of, nor payment for, any of the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Architect-Engineer shall be and remains liable to the Government in accordance with applicable law for all damages to the Government caused by the Architect-Engineer's negligent performance of any of the services furnished under this contract.

Generally, there is no allegation by the government that the A-E breached the contract. The sole issue is whether admitted design errors and omissions constituted negligence.

The Federal Acquisition Regulation (FAR) requires that the contracting officer make a final decision and enforce liability of Architects-Engineers when a determination of A-E liability has been made.

Each federal agency has its own slightly different instruction, often with variations at each echelon down to the field, as to how to proceed. But they do require that design errors or omissions rise to a level of what the lay public might call "incompetence," before financial liability may be assessed.

Part 42, Subpart 42.71 of the DoD FAR Supplement also provides for voluntary refunds to be requested during or after contract performance, when it is considered that the government was overcharged and retention of the amount in question would be "contrary to good conscience and equity." The decision to solicit a voluntary refund is not made in the field, and is not made without legal counsel review to determine whether the government's rights would be jeopardized by the proposed action. The decision to solicit a voluntary refund is made by the Secretary concerned.

To amplify guidance on A-E financial responsibility contained in Appendix J, NAVFAC P-68, the Western Division, Naval Facilities Engineering Command (WESTDIV) recently issued a revised instruction, WESTNAVFACENGCOMINST 4330.42F. It clearly calls out the analytic efforts that resident officers in charge of construction (ROICCs) and successive echelon reviewers representing codes 04 and 05 must make before reaching a decision that there is no financial responsibility, or a decision that liability exists in an amount supported by available evidence, and should be pursued.

NAVFAC P-68 and WESTNAVFACENGCOMINST 4330.42F set forth NAVFAC policy that A-Es may be liable for certain costs caused by negligent performance of any service furnished under their contracts, whether or not recoverable costs to the government will exceed administrative costs, if it is otherwise in the interests of the government to impose A-E financial responsibility.

The instruction sets out the test for negligence as failure of the duty to exercise the reasonable care and skill observed by members of the

profession in the same or similar circumstances.

In order to make a finding of A-E liability, that is, financial responsibility for damages suffered by the government, each of four elements must be proved:

- There is a deficiency in the A-E's work product.
- The deficiency, if uncorrected, would result in a facility which will not adequately perform its intended function.
- The deficiency was a result of an error or omission by the A-E.
- The error or omission resulted from negligent conduct by the A-E (i.e., the error was due to the failure of the A-E to exercise the ordinary skill and competence of members of its profession).

Before there can be recovery, the government must have suffered damages. Thus, a damages element must also be analyzed. It has two parts. First, there must be evidence that the error or omission resulted in extra cost to the government above that which would have been incurred had the original plans (drawings) and/or specifications been correct. Second, there must be a showing that the government mitigated its damages.

This generally requires that the ROICC invite the A-E to any negotiation with the construction contractor at contract modification for the extra costs incurred on account of design changes to remedy the defect is being worked out. Otherwise, the A-E may be able to claim that a cost-effective solution was not selected, or that the government was "over-generous" in its award under the modification. This element goes to what lawyers call "mitigation."

The days when designers were willing to offer money out of their pockets when the government discovered a simple error or omission that cost time and monetary loss are quickly disappearing. Insurance companies will not pay claims unless there is a basis in negligence (usually to be proved by a court or ASBCA hearing). Designers, like all humans, are subject to making mistakes. They should not be asked to pay for those that are reasonably expected but do not rise to the level of "negligent" performance.

Most A-E financial responsibility cases that arrive from resident engineering offices to be evaluated by members of the A-E Responsibility Board reflect the non-negligent type of errors and omissions expected in every design contract. Inevitably, some inconsistencies or inaccuracies creep into every human enterprise.

No percentage figure has ever been established for NAVFAC construction design changes, but most people would probably agree that 2 percent of construction contract costs in change orders would be "reasonable in the circumstances," and would not indicate neglect of the duty of due care in preparation of engineering and architectural studies, plans, and specifications.

By the same token, probably most experienced personnel would agree that a 10 percent figure would be too high. But a 10 percent figure on a complex, state-of-the-art design might be "reasonable." And 2 percent might be too high! For the reason that quantitative figures do not reflect judgment, it is important to consider each error or omission in its own right.

Facts, such as the date the designer was first notified of the problem, the A-E's responsiveness, and the government's delay in contacting the construction contractor who will be implementing the design fix will also be relevant to the final decision, and should be documented at the time.

The bottom line is found in the answer to one question: Did the A-E's conduct breach the duty of due care and skill of members of his or her profession under the same or similar circumstance?

To determine this, it is essential to examine facts to establish each of the four elements above and to show that the government mitigated its damages. The mitigation question rises to significance in light of facts showing that the government did not follow the advice provided by the

(1) Design deficiency identified

and

(2) Deficiency degrades function

and

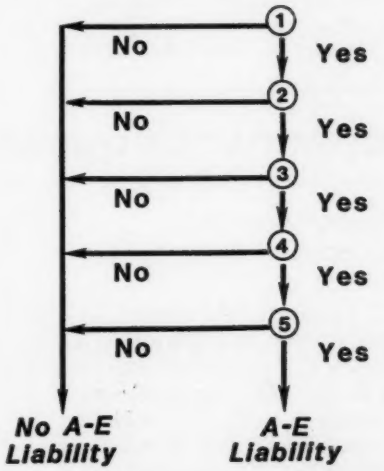
(3) Deficiency result of A-E error or omission

and

(4) Error or omission result of negligence

and

(5) Error or omission causes damage to government



Explanations:

a. Negligence is failure of A-E to exercise the duty of due care to exercise the ordinary skill and competence of members of profession, in same or similar circumstances.

b. Deficiency is an error or omission which results in a latent or patent defect affecting performance adversely.

c. Damages are liquidated amounts representing harm or injury to the government. Government must take all reasonable steps to mitigate (reduce) damages.

design professional, but rather that of the construction contractor, or on the ROICC's own motion, as sometimes happens. A matrix designed by the author and Jesse Coleman, a geotechnical engineer at WESTDIV, simplifies the decision logic:

In determining whether the A-E neglected the duty of care reasonably to be expected of a professional Architect-Engineer in the same or similar circumstances, it is important to apply the standards in effect at the time the design was conceived, finalized, and reviewed. It is inappropriate to evaluate design, particularly state-of-the-art system, in light of later experience. It is not negligent design to try something and fail.

It is negligent to perform inadequate analysis based upon what could then be known, and to ignore current findings available through the literature and in professional education, or the news, to proceed in spite of known technical or scientific impediments to success—unless the client/customer has been fully informed of the risks, and wishes to assume the liability of taking the quantum leap forward. The government does this under certain circumstances, but normally not in the design of NAVFAC construction.

When the ROICC first, and then successive echelons including design and construction and contracts and legal representatives, examine the facts they need to know everything that was relevant, not merely the facts that support a field contention that the designer's errors rose to such a level that they must constitute negligent performance. It is helpful to have a chronology of events including all significant issues and events. Letters, memos, daily reports, and conference notes, as well as change order documentation, are very helpful.

It is devastating to a case to have the A-E bring in evidence that the ROICC failed to communicate, did not invite him or her to consult with the construction contractor, or to conceal facts that would mitigate damages. Often, the designer has been asked to provide redesign because the construction contractor has made errors that now need to be designed around. Instead, this is a problem for which the A-E may have a claim against the government.

The A-E Responsibility Board at WESTDIV acts in essence as an informal jury to evaluate evidence available from the ROICC, codes 04 and 05, as well as to apply contract law and negligence law principles to the case. Skeletal determination and findings with signature concurrence or nonconcurrence make it hard to fairly evaluate whether there is financial liability, and the equitable amount that should be sought.

It is still necessary to meet with the A-E in a full-scale negotiation, after the initial finding has been made. At that time, the A-E may bring in facts that were not available in the file. It violates the doctrine of completed staff work to provide only one-sided versions or incomplete files. This can do nothing but embarass the government, and possibly provide a valid basis for a claim by the A-E for additional fees for consultations and services.

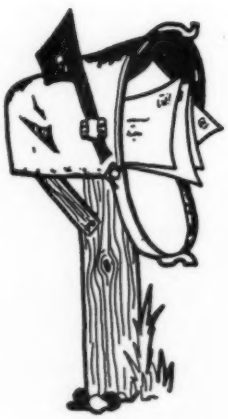
The government has a contractual right to expect complete, accurate, professional work from the Architect-Engineer. The A-E in turn, has a right to expect the same level of professionalism for the government. □

comments/questions

Reader approves Cole's article

I applaud Lt. Christopher Coles' article, "Win-win-win' for AROICCs," in your Fall 1987 issue. He summed up his message perfectly in saying, "The customer *is* our mission." That alone is the attitude that will lead to continual improvement in the quality of NAVFAC's product and in the capability of our national defense forces. Thanks for helping to spread that message.

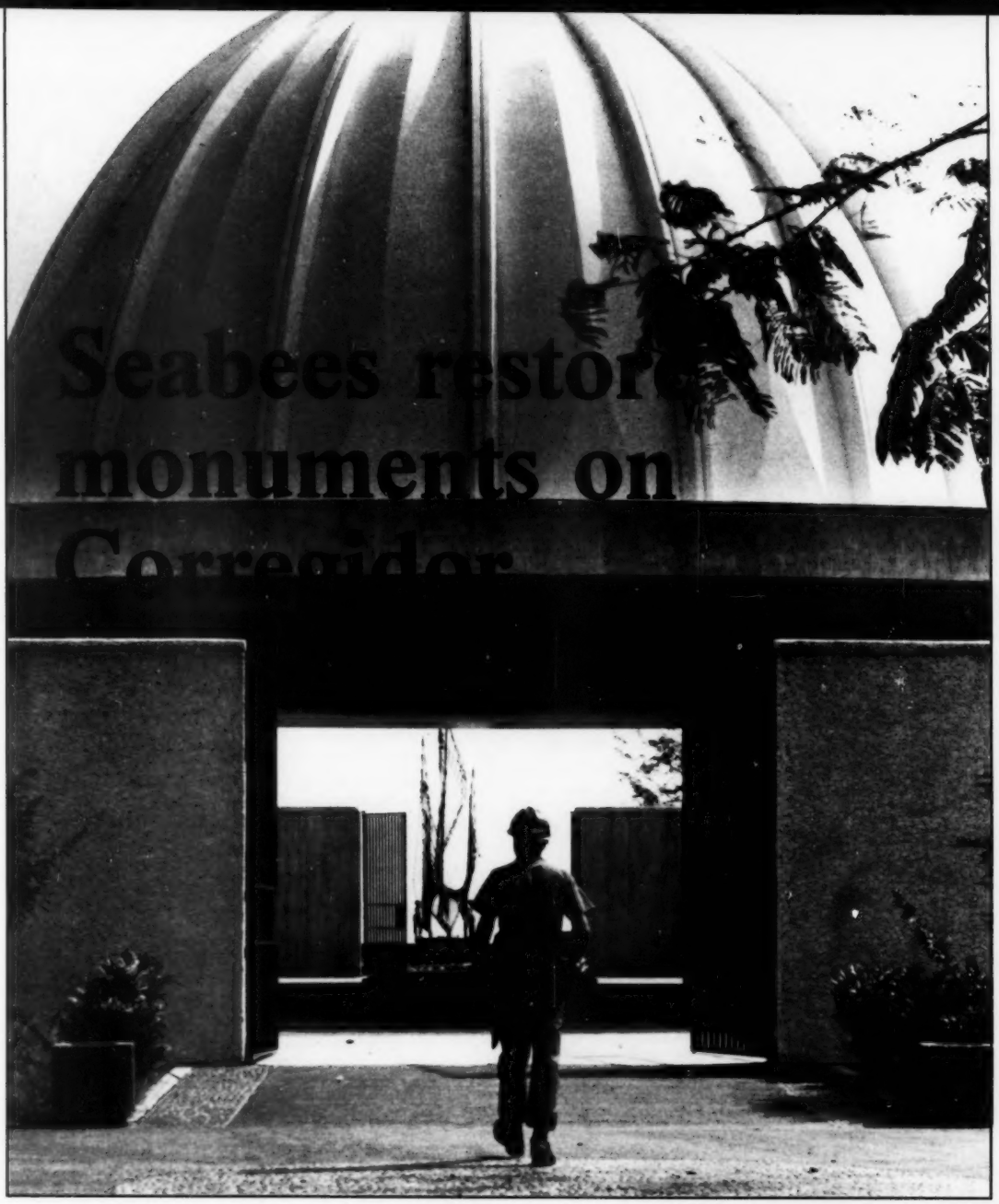
Douglas Farbrother
Director of
Construction and
Housing



Your comments are welcome here

We welcome your comments, questions, complaints, suggestions, criticism, gripes, or even compliments on any phase of the *Navy Civil Engineer.* We're anxious to make the magazine just the way you want it, but we need to know your desires. Anything you have to say on the subject is important to us, so please write to Editor, Navy Civil Engineer, CECOS, Code 20M, Port Hueneme, CA 93043. Or if you have the need to write about a subject you feel needs sharing with the readership, please submit it to us. Don't worry about grammar, or style—we'll help you with that!

Seabees restore monuments on Corregidor



CE2 Arthur McKinley of Spartanburg, S.C., walks under the dome of the Pacific War Memorial on Corregidor.

From the shores of Manila and Bataan, people could look across the bay to the lights of Corregidor and wonder at their era of amazing technology. The island was alive with people. it wasn't just a jungle fortress, it was a military city.

That was more than 40 years ago. Today, Corregidor, known as "The Rock," lies almost dormant. What life is left in the island at the mouth of Manila Bay now belongs to its 200 civilian inhabitants and to the visitors who spend a few hours at the Pacific War Memorial and the historic battle sites.

But the 19-year-old memorial, symbol of corregidor's legacy and the Pacific battlefield of World War II, has been rapidly deteriorating.

Concern over the monument buildings and grounds

DUE TO A LACK OF PHOTOGRAPHIC CONTRAST BETWEEN TEXT AND BACKGROUND, THIS PAGE DID NOT REPRODUCE WELL.

Restoration of this 19-year-old, WW II memorial was assigned to NMCB-74

culminated in April 1987, when a U.S. delegation visited the island after hearing about the memorial's disrepair. Since that visit, the Disabled American Veterans have given the Navy $34,000 to purchase materials for restoration of the monument.

In late November, a 22-man Seabee team from Naval Mobile Construction Battalion 74's Subic Bay, R.P., detachment arrived on the island to repair the memorial's buildings and walkways. Work was integrated into a 45-day training exercise for the NMCB-74 Seabees, homeported in Gulfport, Miss.

Repairs included painting the monument dome, cleaning and rehanging exterior marble wall panels, replacing and repairing exposed aggregate walkways and walls, replacing floor drain covers, trimming trees, cleaning and patching the reflection pool, and providing incidental maintenance to roads and paths in the vicinity of the work site.

Museum repairs included a built-up roof with concrete cap and curb, an elevated 880-gallon water tank to feed the bathrooms, a foundation fill around the eroded base of the building, new acoustic ceiling tile and plywood paneling, painting the offices and lobby, and bathroom and exterior door repairs.

The team transported nearly 90 tons of heavy equipment (including a 1,500-gallon water truck and a 1,200-gallon fuel truck) and 145 tons of materials (including more than enough gravel and sand to fill an olympic-size swimming pool). A refrigerator and freezer, running off generator power, held the 300 pounds of food transported in each week.

HM2 Jonathan R. Gaines of Charlotte, N.C., (right) and EO2 Steven R. Willadson of Sumner, Wash., sort the detachment's mail which arrives weekly.

"Food is flown in (by Fleet Composite Squadron 5), and the drygoods and building materials we need are delivered by (Naval Station Subic Bay port services) boat," said Chief Construction Mechanic Lee H. Boyd II of Fairfax, Va., assistant officer in charge of the camp.

Typhoon Nina, which caused extensive damage in other areas of the Philippine islands on Thanksgiving Day, proved to be only a major annoyance that held up construction for two days as the men found shelter in the monument pump house, then reconstructed their three-tent camp after the storm ended. "The only damage (to the camp) was minor tears in the mess tent," said Boyd, "but everything was wet and muddy."

The men were on the island less than two weeks when they found they had combined their busy construction schedule with other aspects of living on Corregidor. Through them, the island's residents received rice, powdered milk, and school books as part of Project Handclasp, and the men saved candy bars, hot choco-

BU2 Anthony M. Lukes of Cedarburg, Wis., sandblasts the museum roof to prepare it for concrete capping.

Roughing it was part of everyday business for the Seabees working on Corregidor.

BU2 Angel L. Gonzales Jr., of Philadelphia, Pa., uses a 20-pound sledge hammer to loosen pebble wash being replaced.

HM2 Jonathan R. Gaines treats two-year-old Abigail Revirea for a second-degree burn on her hand as her mother, Helen, looks on. Both live on Corregidor.

late, and other items from their food rations for the children. In turn, the local people visited the camp with fruit, to say hello, and sometimes to visit the camp corpsman, who provided first aid and minor medical treatment.

"There's no medical facility on the island," said Hospital Corpsman Second Class Johnathan R. Gaines of Charlotte, N.C., "I saw about 15 local people in my first two weeks on the island, and up to then my most major case was a two-year-old girl with a second-degree burn on her hand. Most of what I treat are minor colds."

The men worked on their memorial construction projects six days a week, 6:30 a.m. to 5:00 p.m.; yet during one of their Sundays off, the team repaired the roof of the island's one-room schoolhouse. A former U.S. soldier who survived the invasion of Corregidor during World War II provided the materials while the Seabees provided the muscle.

Each of the 22-member team wanted to help the people of the Corregidor and made plans to work on other small self-help projects during their stay there, according to Boyd. "They are very poor people here on Corregidor, with monthly earnings of approximately 670 pesos, which is about $34.50 per month in U.S. currency."

Shortly after their arrival on Corregidor, the Seabees played a company of Filipino Army Rangers on the island for training in a basketball game. "They were part of the Presidential Guard," Boyd said. "They challenged us and we used international rules — 20-minute quarters. I don't remember the final score, but the Seabees won."

Tourists visit the island and memorial three times a week, according to Boyd. The Seabees patiently answer questions about their work and explain the history they've learned about the island. And it's the history that intrigues the men the most.

"I go exploring just about every day, when I get free hours," said Constructionman Electrician Second Class Arthur McKinley Wyatt of Spartanburg, S.C., "I've seen Malinta Tunnel, all of the gun emplacements, and the hospital barracks. I try to imagine all the activity that went on, the people here. The one thing that constantly goes through my mind is imagining the people who might have died here, in the tunnels, at the guns."

For Builder First Class Charles E. Shadrick of Signal Mountain, Tenn., a Seabee for nine years, the Corregidor project has been his most challenging job in the Navy. "It's surviving with the bare (construction) necessities for a long duration of time; it's having people depend on you as a supervisor to get things done. That's what it's all about here." □

The detachment's mail is flown in each Thursday by Fleet Composite Squadron 5, Subic Bay, R.P.

By JOCS B. A. CORNFELD
Naval Construction Battalions
U.S. Pacific Fleet
Pearl Harbor, Hawaii

Some lessons learned concerning

A-E liability

By FRANK H. LEWIS
Counsel, Northern Division
Naval Facilities Engineering Command
Headquarters

The Armed Services Board of Contract Appeals (the Board) has had an opportunity to consider some NAVFAC cases relating to architect and engineer (A-E) liability. Examining what the Board considers important will help NAVFAC managers to avoid those pitfalls which otherwise could result in unnecessary delay and expense.

The first and principal case which the Board has reviewed concerning A-E liability under a NAVFAC contract is the appeal of *Ralph M. Parsons Company,* decided in November 1984, and cited at 85-1 BCA, para. 17, 787. That case illustrated the extent of the A-E's responsibility under the standard clause of the A-E contract entitled "Responsibility of the Architect-Engineer" (See Federal Acquisition Regulations section 52.236-23).

The case concerned three technical problems: an inadequately designed roof joist, the government's failure to consult with the A-E when pouring the concrete roof while knowing the joist may have been inadequate, and a pipe failure in the salt-water intake system which system had not been installed in accordance with the A-E's design.

The technical problems raised three corresponding issues. The first issue dealt with the A-E's duty of care regarding its failure to properly design the roof system. The second issue concerned the government's liability for pouring the concrete on the roof knowing of inadequacy of the joints and failing to consult with the A-E prior to the pour. The third issue dealt with the burden of proof the government has to demonstrate that the construction contractor complied with the contract specifications.

As to the first issue, in analyzing the "Responsibility of the Architect-Engineer" clause, the Board reiterated a prior ruling that the A-E is not an insurer of the adequacy of design, but will be held to a standard of care expected of A-E professionals, similarly situated. In the case of the roof systems, the Board found that the A-E failed to meet that standard of care by negligently failing to design a roof with adequate load capacity. Thus, the A-E was responsible for the redesign and installation of an adequate roofing system.

However, the damages which the government was to have recovered from the A-E would be mitigated to the extent the government, knowing the joists were inadequate to support the roof, imprudently and unnecessarily expended costs in pouring the concrete. Therefore, the government could not recover costs from the A-E for removal of the concrete and damage to joists and girders resulting from the pour.

As to the third issue, the Board found that the government's burden of proof includes proving the construction contractor complied with the design before the government can claim it was damaged by the A-E's failure to properly design the project. Because the government did not meet this burden, the board would not find that the A-E's design actually caused the failure in question. Moreover, there was evidence that the underwater pipe failed because the contractor used improperly sized pipe and inadequately compacted the soil.

Lessons: (1) The A-E is not an insurer of its work, but rather is held to the standard of care that one would expect of a skilled Architect-Engineer under the same circumstances; (2) unreasonable government conduct causing damages will be taken into account in mitigating any damages otherwise due the government; and (3) no action should be brought against the A-E unless it can be demonstrated by the government that the construction contractor complied with the A-E's essential design.

In a subsequent case, *Griffels Associates, Inc.,* decided in October 1985, and cited at 86-1 BCA, para. 18542, the Board found the A-E liable for extra costs incurred by the Navy under a construction contract. In that case the A-E designed a new pipe shop to replace an existing pipe shop at the Naval Shipyard, Pearl Harbor.

As part of the project, 27 jib cranes were to be relocated from the old shop to the new shop. The relocation necessitated the installation of backstay mounting plates used in supporting the backstay rod and crane booms. The A-E's design imposed upon the construciton contractor the responsibility of locating and installing the new backstay mounting plates, with the following drawing notes:

> "NOTE – Contractor check existing jib installation for elevation of backstay mounting pl (plate). NOTE 1. Contractor to coordinate and verify location of ½" stiffness and 1" bracket pl's (plates) with contracting officer."

The construction contractor, utilizing the elevations of the backstay mounting plates in the old shop, fabricated and installed a number of such plates in the new shop. It soon became apparent that the installations would cause physical interferences between the cranes or backstay rods and other portions of the new shop, such as crane runways, platforms, and beams.

Under the contract, the A-E was specifically tasked with the responsibility of reviewing and making recommendations for approval or disapproval of the construction contractor's shop drawings. The construction contractor submitted to the A-E shop drawings showing backstay mounting plates and jib stay mounting plates. The A-E reviewed and approved the shop drawings. The Board concluded the A-E was responsible for the "deficient and misleading" shop drawings.

The Board required the A-E to correct the deficient drawings at no additional cost to the government and pay for all damages incurred by the government because of negligent preparation of the drawings. The Board also noted the contract already required the A-E to correct errors or deficiencies in the drawings. Thus, the government was entitled to repayment for amounts paid the A-E under a contract modification for correcting the deficient drawings.

Lessons: (1) Failure of the A-E to set forth specification or drawing requirements fully and unambiguously in a government construction contract may result in A-E liability; and (2) erroneous payments by the government for correction by the A-E of deficient drawings are recoverable.

Failure to review drawings may result in liability for costs

In *O'Neal Engineering, Inc.*, decided in March, 1986, and cited at 86-2BCA, para. 18906, the Board found an A-E had failed to exercise due care in reviewing government-furnished drawings, provided for the purpose of informing the A-E of the size of existing electrical ducts for a project at the Marine Corps Station, Cherry Point, North Carolina. In that case, the A-E, as part of his obligations to design replacement of a number of 12,470 volt feeders, was required to increase the size of the electrical cables.

The government-furnished drawings disclosed that at least four out of five existing cable duct runs were too small for the size of the cable to be provided in the replacement.

In its decision, the Board found that the A-E had failed to reasonably exercise "that degree of ordinary and reasonable care, skill and diligence as would be expected of an average member of the profession." The A-E failed this obligation by not discerning from the government drawings the duct runs were too small for the proposed cable. The Board stated, "In failing to adequately review these drawings appellant did not adhere to the standard of care ordinarily expected of one in his profession."

Although the A-E argued that the government was negligent in not pointing out to the A-E the existing conduit size, the Board rejected the argument, citing the responsibility of the Architect-Engineer clause. This clause, which states the government's approval of the A-E's services did not operate as a waiver of the A-E's primary responsibility, was held to include a careful review of the information available to the A/E. Thus, the A-E was found liable for those extra construction costs incurred by the government resulting from the inability of the construction contractor to install the specified cable in the existing ducts.

Lessons: When the A-E is obligated to carefully review government-furnished drawings as part of its contract, failure to do so may result in liability for construction costs incurred as a result of such failure.

Threaded through the *Parsons, Griffels,* and *O'Neal* cases are some question the Board considers important in resolving the A-E's liability under its contract.

- What were the significant obligations undertaken by the A-E under its contract?
- Did the A-E, as a result of its own conduct fail to meet a significant obligation?
- Would a prudent A-E, under the same circumstances, have failed to meet that obligation?
- Did the government or anyone outside the A-E's control contribute in any way to the failure?
- But for the A-E's failure, would the government have been damaged?

Keeping these questions in mind may help, not only during contract administration, but also during the contracting officer's difficult determination regarding an A-E liability claim.

Unearthed 19th century cannonballs stir memories of rich naval past

By CDR LEE SOLLENBERGER, CEC, USN
Resident Officer in Charge of Construction
and
JAMES D. DOLPH
Shipyard Historian
Portsmouth Naval Shipyard, N.H.

The Portsmouth Naval Shipyard in Portsmouth, N.H., is the oldest government-owned shipyard in the United States. It is quite common to find the unexpected during excavations, as demonstrated by the following.

The new $9.1 million engineering/management facility, which is currently under construction at the Portsmouth Shipyard, will add a six-story office addition onto the northeast end of the existing administration building (Building 86). During site excavation for the project, the contractor came across some mementos of the Shipyard's past — two 19th century cannonballs.

Building 86 and the new engineering/ management facility are located on the site of the Shipyard's former Gun and Shot Park (Figure 1). The park was intended for the storage of armaments and was located directly across the street from the ordnance building. Construction of storage pads on the northeast end of the park and racks on the southwest end began in 1858. Granite blocks arrived at the Shipyard by coastal stone schooners. They were then hauled to the site by oxen and laid in place.

Upon completion, the pads (called shot beds) supported the weight of hundreds of cannonballs stacked in pyramids. The racks (called gun skids) supported rows of cannons (Figures 2 and 3). Two buildings, nos. 21 and 25, were also erected on the southwest and northeast parts of the park. Building 21 was known as the Howitzer Shed and Building 25 was the Shell and Shot House. The entire park was completed shortly after the Civil War.

Forty years later, in 1901 the Gun and Shot

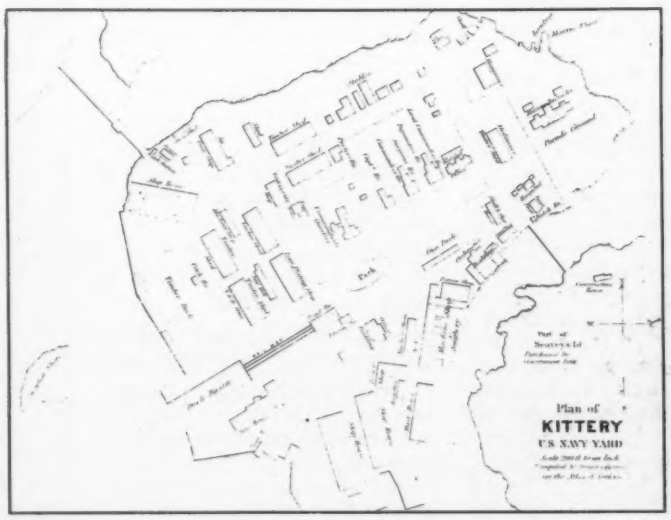


Figure 1. Plan of Kittery.

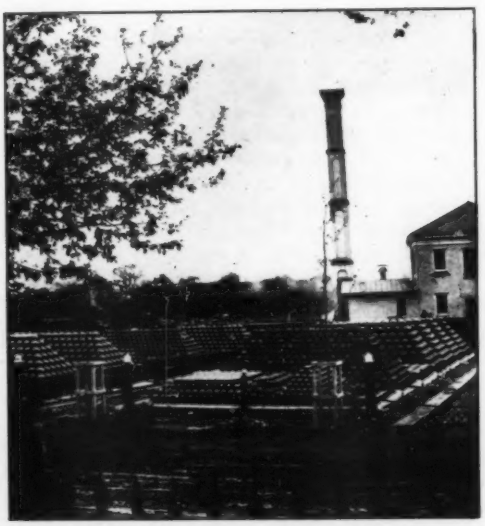


Figure 2. Gun and Shot Park (circa 1880).

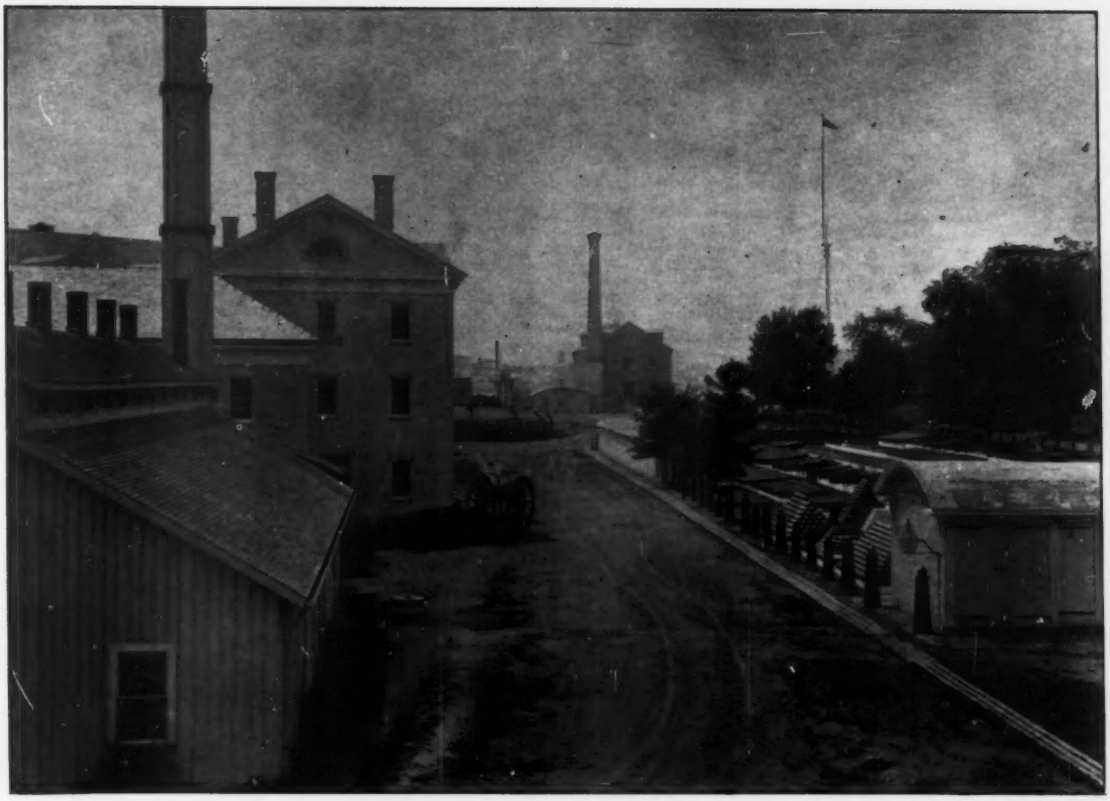


Figure 3. Gun and Shot Park (circa 1880).

Park was reduced to make way for the construction of a new three-story general supply building (Building 86) at the southwest end of the park. Building 21 was torn down and most of the gun skids were removed. Construction of Building 86 was completed in 1905.

Building 86 made history as the site of the Treaty of Portsmouth. In the summer of 1905, President Theodore Roosevelt invited the governments of Russia and Japan to this country to hold negotiations to end the Russo-Japanese War. Portsmouth Naval Shipyard was chosen as the setting because of its comfortable climate and secluded location. The peace commissioners held daily meetings at Portsmouth, and at 3:45 p.m., on September 5, 1905, the Russo-Japanese Peace Treaty was signed on the second floor of Building 86.

Back at the northeast end of the site, Building 73 was built in 1901 (adjacent to Building 25) as a shipyard dispensary. The dispensary was on the first floor, and living quarters were on the second. Building 25 was converted into garages. In the years to follow, administrative and industrial offices were set up in Building 86. In 1940, a 60-foot addition was built on to its northeast end to provide increased office space. The remaining gun skids were paved over and a one-story office building (Building 236) was built over the shot beds.

The initial phase of the engineering/management facility project involved the demolition of Buildings 25, 73, and 236 in August 1987. Then came the discovery of the remainder of the gun skids and the old shot beds. (The foregoing photos/historical data were found later in the shipyard archives.)

The skids were built of single blocks of granite placed end-to-end. The granite blocks comprising the beds were layered three or more deep, grouted and in places tied together with iron rods. The contractor, Harvey Construction Company of Bedford, N.H., used a backhoe and hoe ram to dislodge and remove the hundreds of blocks. It was during the block removal, in late September 1987, that a backhoe operator noticed a round metal object in the excavation, some 100 feet from the northern corner of Building 86.

Upon closer examination he discovered that he had unearthed a 12-inch diameter cannonball with a wooden plug in the fuse hole. The contractor

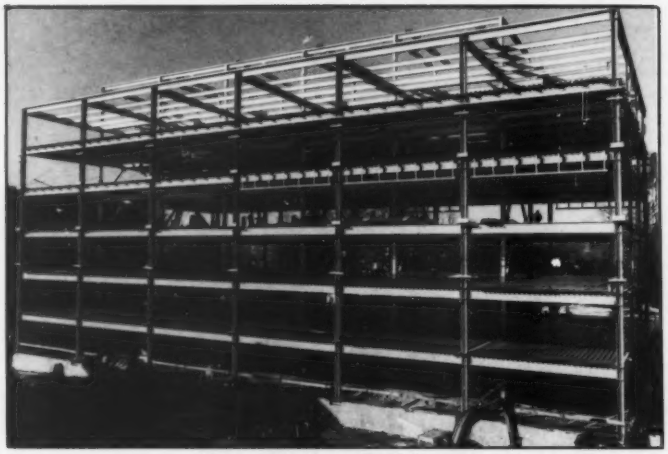


Figure 6. New steel frame engineering management facility.

quickly called the Contracts Office construction representative, Robert Seeley, and the Supervisory Civil Engineer, Bruce Hall, to the scene.

The Contracts Office contacted the Explosive Ordnance Detachment (EOD) at Naval Air Station (NAS) Brunswick, Maine, and requested they check the cannonball and search the construction site. The next day, the project was shut down while MMC George Follett and AO2 Bradley McCray swept the site with metal detectors. With the assistance of Contracts Office and Harvey Construction personnel (and under the curious eyes of shipyard passers-by), the EOD personnel found many metal fragments, but no more cannonballs. They then took the 12-inch diameter ball back to NAS Brunswick to determine if it posed any danger (Figure 4).

Construction progressed with the contractor's backhoe operators carefully excavating the new basement adjacent to Building 86. Three weeks later, they unearthed a 10-inch diameter cannonball about 50 feet northeast of Building 86. Again, the EOD team responded and removed the second ball to NAS Brunswick.

The 12-inch diameter ball was hollow; upon removal of the wooden plug, EOD personnel disposed of the few old powder remains inside. The 10-inch diameter ball had no fuse hole; through x-raying, EOD personnel determined it to be solid.

The two unearthed cannonballs were not forgotten. After ensuring that both were safe, in December 1987, the NAS Brunswick EOD returned them to the Portsmouth Naval Shipyard. Today, they are resting comfortably in a display case in the lobby of Building 86 (Figure 5). No additional cannonballs have been discovered, and construction on the new steel-framed engineering/management facility continues on schedule (Figure 6). □

Figure 4. Explosive Ordnance Detachment from NAS Brunswick, Maine, AO2 (DV) B. McCray and MMC(DV) G. Follett pose by cannonballs.

Figure 5. Historical cannonballs "rest" in display case in Building 86.

Personal liability of Navy employees

According to current Department of Justice statistics approximately 4,000 lawsuits are pending against over 12,000 present or former federal officers in their individual capacities. While not a serious or pervasive threat to most government employees, the purpose here is to give some background on the types of lawsuits included in these statistics and to explain what can be done to reduce risks of personal liability.

Personal liability is incurred when a judgment is imposed on an employee in his or her individual capacity. A lawsuit naming a federal employee in his or her individual capacity is different from a suit naming a federal employee in an official capacity. When a government employee is sued in an official capacity, the real defendant is the United States as represented by the title held by the named official. Should the court award monetary relief, it would be assessed against the resources of the United States. In a suit naming an employee in his or her official capacity, the Department of Justice (DOJ) represents the government official. The federal employee can be rid of an official capacity lawsuit simply by changing jobs and leaving the office. The lawsuit travels with the title not with the individual.

When an employee is sued in his or her individual capacity, however, he or she is the personal target of the lawsuit. The plaintiff seeks recovery from the federal employee's personal assets as opposed to the assets of the United States. The employee cannot shed the suit by shedding the job, even though the suit may have arisen out of the performance of official duties. The federal employee must obtain personal representation, either by hiring private counsel or by making a formal request for DOJ representation. (If the federal employee's actions giving rise to the suit reasonably appear to have been performed within the scope of his/her federal employment, and if it is determined that providing representation is in the best interest of the United States, DOJ generally will accept the case for representation. See 28 U.S.C. 517.)

There are several different grounds for bringing cases against federal official in their individual capacity. They include common law torts, such as negligence; constitutional torts, such as the improper restrictions of a person's right of free speech; and violation of a statute, such as the Resource Conservation and Recovery Act. Violation of a statute may lead to civil or criminal penalties. The basis for each type of lawsuit will be discussed separately followed by a discussion of options available to the employee to reduce the risk of personal liability.

Although there are many grounds for lawsuits against federal employees in their personal capacity, it should be remembered that there are also a number of statutes that specifically prohibit suits against federal employees. For example, the Federal Torts Claims Act is the exclusive remedy for injuries resulting from a federal employee's negligent operation of a government-owned motor vehicle. Likewise, the Clean Water Act specifically exempts federal employees from personal civil liability.

The primary defense of a federal employee sued in his or her personal capacity is the immunity defense. That defense is based on the theory that in order to perform their jobs to the best of their abilities, and without fear of lawsuits based on actions taken as public officials, federal employees should be protected from lawsuits; that is, they should be immune. Immunity may be absolute, meaning that any lawsuit filed should be immediately dismissed. Or it may be qualified, meaning that if certain facts are proven to be true, either through papers filed with the court or through testimony, then the lawsuit should be dismissed. In discussing the grounds for bringing lawsuits against federal employees, the type of immunity that is available to defend the employee from the suits will be identified.

It should be noted that under the holding in *Feres v. United States,* 340 U.S. 135 (1950) and subsequent cases, a member of the armed services may not bring a tort action against the government or a government official individually for injuries that arise out of or are in the course of activity incident to service. *United States v. Johnson,* * U.S. *, 107 S. Ct. 2063 (1987); *Chappel v. Wallace,* 462 U.S. 296 (1983).

Common Law Torts

Common law torts are based on physical or psychological injury to the person. Some of the types of common law tort actions brought against federal employees include injury to reputation (*Spalding v. United States,* 161 U.S. 483 (1896), wrongful death (*John v. Pettibone Corp.,* 796 F.2d 724 (11th Cir. 1985), and negligence (*Erwin v. Westfall,* 785 F.2d 1551 (11th Cir. 1986).

Previously, as a general rule, federal officials were held to be absolutely immune from liability for common law torts. *Barr v. Matteo,* 360 U.S. 564 (1959). However, recent circuit court cases have allowed common law tort actions against federal employees in their capacity if the actions giving rise to the suit are routine operations which do not involve the exercise of discretion. *Erwin v. Westfall,* 785 F.2d 515 (11th Cir. 1986); see *Strothman v. Gefreh,* 739 f. 2d 515 (10th Cir. 1984). In *Erwin,* a federal employee brought a negligence action against his supervisors for injuries sustained from exposure to toxic soda ash. Erwin alleged that bags of soda ash were improperly stored, and that he should have been warned of soda ash were improperly stored, and that he should have been warned that inhaling soda ash was dangerous. The Eleventh Circuit, reviewing the district court's summary judgment determination, held that Erwin's supervisors were not entitled to offical immunity solely because they were acting within the scope of their official duties and that a material question of fact existed as to whether or not the challenged conduct was discretionary. This decision was appealed to the Supreme Court to resolve this question.

In a January 13, 1988, opinion, *Westfall v. Erwin,* No. 86-714, the Supreme Court affirmed the Eleventh Circuit's ruling that a federal employee will only enjoy absolute immunity from state tort law liability if his challenged conduct is both within the scope of his employment and is discretionary. According to the Court, the granting of absolute immunity for a federal employee's nondiscretionary functions would not further the immunity doctrine's central purpose which is to shield the independent decision making of government personnel from state tort liability. The court made no

*numbers unavailable at time of publication.

determination of the level of discretion necessary to trigger the protection of absolute immunity but did indicate that more than mere minimal discretion was necessary.

Constitutional Torts

In 1971, the Supreme Court permitted individuals who were deprived of their constitutional rights by the actions of federal employees acting within the scope of their employment, to sue those federal employees in their personal capacities. *Bivens v. Six Unknown Named Agents,* 403 U.S. 388 (1971). This was the birth of the cause of action known as a constitutional tort or a *Bivens* case. *Bivens* involved federal law enforcement officers conducting a search under the Fourth Amendment; however, the type of lawsuits permitted by the *Bivens* case can be based on any alleged violation of an individual's constitutional rights, including First Amendment rights. *Kotarski v. Cooper,* (799 F.2d 1342 (9th Cir. 1986) permitted a *Bivens* claim by a federal employee who claimed that his demotion from a supervisory position was a retaliatory personnel practice for his voicing unpopular views, and thus violated his First Amendment right of free speech. But see *Hubbard v. United States,* 809 F.2d (D.C. Cir. 1986).

To succeed in establishing a constitutional tort, the plaintiff must show that the federal official's actions violated clearly established constitutional guarantees that are expressed either in statutes or case law. *Harlow v. Fitzgerald,* 457 U.S. 800 (1982). The plaintiff must show more than a negligent violation to recover under a theory of constitutional tort. *Davidson v. Cannon,* U.S., 106 S.Ct. 668 (1986). The defendant in a constitutional tort case is entitled to qualified immunity if it is proved that there was no violation of a clearly established constitutional guarantee.

Absolute immunity may also be available to a federal official under a constitutional tort suit in certain limited circumstances, for example, a witness is granted immunity for his or her testimony (*Briscoe v. LaHue,* 460 U.S. 326 (1983)). A plaintiff will also not be able to recover under a constitutional tort theory if there is another basis for relief or recovery, such as an employee grievance system. *Bush v. Lucas,* 462 U.S. 367 (1983).

A federal official may be charged with the violation of a statute that may have civil or criminal sanctions for actions occurring within the scope of his or her job performance. Federal officials are immune from state criminal process and proceedings pursuant to the Supremacy Clause of the Constitution, if the actions giving rise to the state prosecutions were authorized by federal law. See *Johnson v. Maryland,* 254 U.S. 51 (1920); *Neagle,* 135 U.S. 1 (1890); *Clifton v. Cox,* 549 F.2d 72 (9th Cir. 1977). Federal officials have no immunity protecting them from prosecution for criminal violations of federal law.

As a general rule, absolute or qualified immunity will be available to the federal employee sued for civil damages for violation of a statute, unless it seems clear in a particular statute that Congress intended to eliminate the immunity protection. For example, some statutes, such as the Clear Air Act, specifically authorize a state or local authority to bring an enforcement action against the federal government or any federal employee. Nevertheless, even where a complainant seeks damages against an official under a statute that expressly provides a damages remedy, a defense of qualified immunity or other defense may be successfully argued. *Nixon v. Fitzgerald,* 457 U.S. 731, 748-49 (1982).

Reducing Liability Risks

The first step in reducing liability risk is proper and informed job performance. Each employee should be aware of the requirements of his or her job and any limitations imposed on his or her authority. Regular briefings on matters such as standards of conduct or new restrictions imposed on Navy activities cannot insulate themselves from liability by insulating themselves from knowing the details of their activity's operation. For requirements such as those imposed by environmental laws, a commanding officer must establish and individual or team responsible for keeping current with applicable requirements and maintain compliance. The commanding officer must keep informed on the activities of the environmental officer(s) and foster a sense of responsibility for compliance throughout the command.

There are many resources available to the federal official for keeping informed. Primary resources are the technical codes at the engineering field division (EFD), public works center (PWC), or headquarters level and the activity counsel. All EFDs and many PWCs have attorneys assigned to assist that activity. These individuals should be contacted for assistance on specific questions and in developing programs to assure all reasonable efforts are being made to comply with the law.

If sued in his or her personal capacity, the employee should immediately contact the activity counsel. Counsel will assist in preparing the request for representation to the Department of Justice and in clarifying the issues. Counsel will also explain the nature of the lawsuit and what options may be available. Some of the options are available only if prompt action is taken; thus early involvement of the attorney is critical. The activity counsel will continue to play an important role in the litigation even after the Department of Justice becomes involved.

In addition to performing one's job in an informed and responsible manner, the federal employee may wish to obtain personal liability insurance coverage. Such coverage provides for the payment of legal defense fees and adverse judgments. It specifically covers federal employees sued in their personal capacity for actions taken within the scope of their employment.

In 1986, the Department of Justice adopted regulations stating a policy that permits the indemnification of DOJ employees for lawsuits brought against them in their personal capacity if they were acting within the scope of their employment and payment is in the interest of the United States. This policy uses the same standard for permitting indemnifications as for providing representation; however, at the present time indemnification is limited to DOJ employees. The Department of the Navy is considering similar regulations to cover Navy employees.

Finally, it is noted that the Department of Justice reported in April of 1987 that there have been only 35 known adverse verdicts against federal employees in their individual capacity for action taken within the scope of employment. Only five of those have been paid to date by the individual defendants. Most suits have been brought against federal law enforcement officers. Most of the suits brought have been promptly dismissed by the courts. The Supreme Court has cautioned lower courts to remember the personal and monetary costs of successfully responding to and defending a lawsuit when reviewing a plaintiff's demand for relief, thus encouraging increased use of motions to dismiss or for summary judgment to quickly resolve such lawsuits. □

WESTDIV gets involved

Ski lift at Bridgeport

By GEORGE B. AVISOV
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In his best seller *Red Storm Rising,* Tom Clancy introduced a Marine Colonel, Chuck Lowe, who had his leg in a cast. He had broken it at the Mountain Warfare Training Center (MWTC) in California, the day after Christmas while skiing on his own time.

The book is a fascinating fiction. The Center, however, is real. It is located in Bridgeport off Highway 395 on the picturesque eastern slope of the central Sierra Nevada mountain range. The school is spread out on approximately 45,000 acres of U.S. forest land for the purpose of drilling and exercising the Marines. The mission of the MWTC is to prepare the troops to maneuver, fight, and survive in a cold mountain winter environment, similar to that of Norway or Iceland.

Teaching Marines to ski behind all-weather personnel carriers in the mountain terrain is one of the most important duties during winter warfare operations. The troops must be able, with a full complement of packs and weapons, to grip a line or a bar (simulating the special harness behind a carrier), pull up the hill, disengage, and skillfully reach the predetermined destination without being incapacitated or killed.

In spring of 1987, when the request came from the Commanding General, U.S. Marine Corps, Camp Pendleton, Calif., to construct a ski lift that would provide such training, it was assigned to Western Division's (WESTDIV) Mechanical Branch. By then, the site had already been selected and a team of surveyors was mapping the hill. There were some specific conditions to be considered:

- Carrying capacity must be up to 400 men per hour

- No local source of power is available
- Cable height must be adjustable for various depths of snow
- Cable return must be at a higher level than cable ascenting, to load the troops from both sides of the track
- The total length of the ski lift must be approximately 1,000 feet.
- The project must meet the requirements of ANSI B70.1 Standard, passenger aerial tramways, lifts, and tows
- Construction must be finished before the next ski season (1987/88 winter)
- Construction funds (ECC) are limited to $171,000

Those who knew about the time required to properly put in place a new project, regardless of its size, recognized that some unusual difficulties would lie ahead. In addition, the allocated construction funds appeared to be inadequate. And last, but not least, there was no prior, similar experience to draw upon within the ranks of the Naval Facilities Engineering Command (NAVFAC) staff.

Shortly after the project had been assigned, the design manager went immediately to work by telephoning several state building and safety inspectors along the Sierra Mountain region for information on qualified ski lift designers and contractors. He further familiarized himself with the advanced state-of-the-art technology in this field.

The vertical lift rise will be 120 feet.

The Camp Pendleton public works engineering, during preparatory consultations, had been assisted by the leading contractor in this field, located roughly 60 miles away from the Bridgeport construction site.

Pulling from 200 to 400 men per hour.

After some basic facts had been gathered, a meeting was called at WESTDIV to select a swift and proper plan of action. In order to generate a set of performance specifications and drawings, the A-E firm (currently under an open-end contract with this branch) was invited to submit its fee proposal for services, which was negotiated within a record short time. The initial documents were prepared, reviewed, and corrected within a few weeks. Enthusiastic involvement of the resident officer in charge of construction (ROICC) at Bridgeport, T. Pyles, CEC, USN, and W. N. Ringer, a mechanical engineer, was very important in selecting the design detail options and the service and maintenance plan. There were some problems, though, such as an access road and fuel storage and supply, but these were also worked out.

Eventually, with all the input from USMC Camp Pendleton, ROICC Bridgeport, U.S. Forest Service, WESTDIV Engineering, and the A-E firm, on April 9, 1987, the design documents were released for public advertising and bidding. A few weeks later, the construction project was awarded to the lowest of three bidders—a firm who since 1969 had built approximately 400 ski lifts. Their lifts are operating in Alaska, Utah, Vermont, Colorado, California, Arizona, France, Chile, and many other famous

resort locations around the world.

The preconstruction meeting was held early in July at the contractor's manufacturing plant. All previously mentioned participants attended this milestone gathering, during which the principals of the firm outlined the plan of execution. All details were consequently worked out to the mutual satisfaction of all participants and in compliance with the provided performance criteria and ANSI specification.

The vertical lift rise will be 120 feet, pulling from 200 to 400 men per hour, depending on the set cable speed. The rated personnel loading time interval will be nine seconds at 500 feet/minute cable speed. The lift will be driven by a six-cylinder, 126 hp at 3600 rpm Ford Model CSG-649 interval combustion engine, using propane (LPG) fuel. The engine output, through Hansen Gear Drive Model NG34, will be reduced at a 100:1 ratio, providing a 20,567 feet-pounds torque at 14.3 rpm to the main cable drive.

Passenger-carrying platters will be spaced approximately 75 feet apart. Each platter (to ride on) is attached to a rigid pole with a retrievable nylon line, capable of automatic length compensation in accordance with the snow condition and elevation by means of *Leitner* spring boxes. These spring boxes have built-in retraction dampeners, to prevent a whipping affect. Spring boxes through a hanger and grip assembly are attached directly to the 1.25-diameter multi-stranded steel wire rope (by *Bridon America*).

The lift is driven by a six-cylinder, 126-hp engine.

The cable is to be supported by carrying sheave assemblies that have some interesting features. Each 20.75-inch diameter sheave is made of cast aluminum alloy and covered with a grooved hard rubber liner to eliminate metal-to-metal contact. The sheave axles are standard automotive truck axles designed for a long and rough outdoor life.

The cable, between two sheaves, passes in at close proximity of a rope position detector (RPD). In an unlikely event of cable shifting or jumping off its track, the RPD switch will instantaneously shut off the system, thus preventing a possibility of a "cable-saw" hazard.

All towers, the control system, operators booths, cable-guide sheave, and carrier assemblies were to be manufactured at the contractor's plant. The engine, gear drive, hydraulic motor, communication system, cable, and spring boxes were purchased from reliable, industry-standard sources by the contractor. Propane fuel, plentiful in this region as a heating source, was provided by the local gas company. The gas company also provided and delivered enough fuel tanks to last the whole winter.

> Finally, the big day came when the lift was succesfully tested . . and the lift was ready!

The line towers were set in reinforced concrete footing, suitable for seismic zone 4 condition under the full load and cable tension.

As soon as prefabricated and preassembled towers were in place, it began to snow! The contractor's people were busily assembling the power plant, installing the telephone communication system, and putting the fuel lines in place. The local gas company delivered the full supply of butane, over the road sprinkled with the first inch of snow. The quality assurance concrete tests consumed four weeks of time before the 1¼-inch diameter steel cable could be installed with the 25,000-pound tension required to pull the load without slippage or excessive droop.

Finally, the big day came when the lift was successfully tested under a full load of people and simulated dead weight. It was a sunny day—December 11, 1987. Technicians were varying the speed, stopping, and restarting frequently, testing for possible rollback, verifying the function of all control stations and communication lines.

At last, the lift was ready for operator training and the full intended use. The weather was also cooperating: It began to snow for real.

Now, Marine Colonel Chuck Lowe (from *The Red Storm*) is always welcome on Christmas or any other day, at the newly improved ski slope.

★ ★ ★

There is a lesson to be learned from this story: how after a proper investigation, good planning, and cooperation of all parties—a successful project within a minimum time and at a minimum cost can be accomplished. □

NCEL strives to curb noise pollution

By JERRY A. THOMAS
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For 20 years the Navy has faced a spiralling environmental dilemma; the more powerful the aircraft, the louder the noise pollution when jet engines are tested.

It's vital to aircraft safety and operational readiness that all engines undergo post-maintenance testing. Advancing technologies continue to produce larger, higher-energy engines. When tested, increased engine power, hotter temperatures, and velocities combine to create more noise. The Navy realizes that this environmental threat must be eliminated to comply with stringent pollution standards.

In an effort to solve the problem, the Naval Civil Engineering Laboratory (NCEL), Port Hueneme, Calif., has been instrumental in developing new design guides for the construction of test cells and hush houses that muffle noise emissions during engine testing. Formulation of these proposed major design criteria has been a three-year effort involving the Aviation Facilities Group under Edward Ference of the Naval Facilities Engineering Command, Robert Beerbower of the Naval Air Systems Command (which is responsible for engine testing and aircraft safety), and NCEL.

History and records indicate that conventional construction methods are inadequate. Accordingly, this joint Navy Aviation Engine Test Facilities Program is concentrating upon improved design and building techniques which will meet the Navy's needs through the year 2010.

The NCEL Project Leader, Dr. Eugene Cooper, said the comprehensive study recommends crucial changes in four areas — materials, rectangular construction, computerized design prediction, and fire protection.

Post-maintenance testing on 15,480 engines is conducted annually at 85 Navy test cells and nine hush houses. The cells (14 feet in diameter) test engines after they're removed from the aircraft. Approximately 40 cells are from 30 to 58 years old and only 50 percent are capable of testing modern engines. More intensive tests are conducted in the cells. After detailed maintenance and repair, an engine undergoes two to eight hours of run time with power settings ranging from idle to full throttle. The test is conducted from an adjacent control room.

During a hush house (21 feet wide and 14 feet high) test, the aircraft is backed into the facility with engine in place. A hush house test takes only 30 to 60 minutes with the engine controlled from the cockpit.

Development of any new facility must comply with pollution standards that call for a maximum of 85 decibels of noise recorded 250 feet from the source.

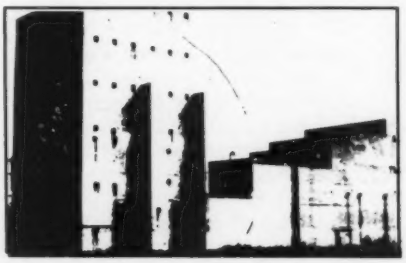
With such restrictions in mind, the new design of the test cell's exhaust section would decrease by 50 percent the deterioration rate of special materials, Cooper said. For example, a high-temperature mineral wool (basalt) absorbs some of the noise. It is shaped into large pillows (four feet by six feet) and encased in a stainless steel mesh.

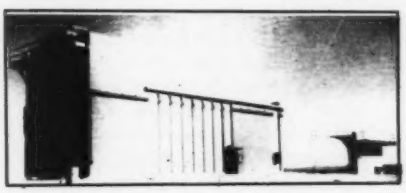
Currently, the mesh breaks down and allows the fibrous wool to escape, decreasing its anti-noise effectiveness. Newer and stronger materials (experimental inorganic fibers) and noise-deadening techniques used aboard submarines are being examined.

Introduction of rectangular flat walls in place of curved stainless steel linings in exhaust sections would make cells structurally stronger, would require less demanding tolerances for machinery and parts, and would lower installation costs. The average test cell costs $4 million and a hush house $5 million to construct. The new design would allow average machine shops to manufacture the facility instead of only three or four specialty shops presently qualified to fabricate cells.

Fire protection within the hush house is another area of prime interest to designers. It takes approximately eight seconds to activate a system that spreads fire retardant foam through 50 to 100 feet of pipeline before reaching the source of a fire. Using new design criteria, a combination of rapidly applied foam (three seconds) and Halon gas would be introduced. The gas chemically suppresses combustion.

Cooper said the study includes the development of computerized analyses to be used before construction plans are approved. During design there is a need for detailed computer-developed data and evaluations of critical interactions of flow mechanics, noise factors, and structural responses. Ongoing analyses uncover potential problems which would be costly to correct after construction is finished. □





The design of the concrete test cell (top) doesn't provide desired test conditions for modern high-powered jet engines. Materials used in this 25-year-old design have deteriorated rapidly. The structure is not compatible with proposed design improvements. A more modern test cell (bottom) constructed in 1984 can be modified using new design criteria to test aircraft engines while complying with environmental standards.

speaking from topside

In my first months as Chief of Civil Engineers, I have traveled to Europe, the Pacific, and throughout the United States meeting with both senior and junior CEC officers and learning first-hand about the challenges we face as a Corps.

I found that junior officers were particularly concerned about career opportunities in the Civil Engineer Corps. I place a high value on candid exchanges of information and subsequent dialogue among all our officers. The following key personnel issues are addressed toward that end.

- **Promotion Opportunities:** Due to recent personnel reductions, the CEC is a bit top heavy and the junior offices will bear the brunt of this problem unless we do something — which we are. We are currently top heavy because we executed promotion plans for O-6, and O-5 and O-4 in fiscal years 1987 and 1988 on the basis of projected growth in the CEC and the Navy. Quite suddenly, the opposite has happened because of action taken by Congress.

The FY 87 one percent officer billet reduction and the FY 88 one percent officer billet reduction resulted in the loss of nearly 80 senior officer (O-4, O-5 and O-6) billets after we had already made selections. Under DOPMA, the number of billets in these grades are controlled, and in turn the number of officers at each grade cannot exceed the number of billets.

Although two percent sounds small, the need for the shore establishment to absorb almost the entire cut for the whole Navy resulted in a much higher reduction to the CEC. The entire officer reduction picture has not totally unfolded, so the worst may be yet to come. But, regardless of the outcome, my objective is two-fold: continue a healthy accession program and keep the flow points down as best we can.

To make progress toward these objectives, and recognizing that the principal problem at this time is the large overselection to the control grades (O-4 through O-6), my plan must include reducing the number of officers in those grades to match the billets remaining. Therefore, our promotion plans for FY 89 take into account the voluntary retirement of more than 90 captains and commanders by the end of FY 89.

The only way to make room for lieutenants to be promoted to lieutenant commander is to promote more lieutenant commanders to commander, and more commanders to captain. To make room for junior officers, senior officers are terminating careers earlier than they expected — most captains will retire with 26 years instead of 30. At the commander level, the increased competition with a larger zone has disappointed more O-5s than normal and, therefore, more of them are terminating careers early.

- **Promotion Flow Point:** The flow point for the FY 88 lieutenant to lieutenant commander board, which met in June 1987, was 10 years, 2 months. The flow point for the FY 89 board, which meets this June, should remain at 10 years, 2 months. The FY 90 board has a projected flow point of 11 years. Actions I am taking to increase losses at the top will keep the flow point to lieutenant commander in the 9- to 11-year range as recommended by DOPMA.

While the flow point to lieutenant commander is rising somewhat, flow points to commander and captain are relative stable. Over the next five years, the commander flow point will rise about six months and the captain flow point will remain constant.

The bottom line is that career officers can expect to spend a little over one additional year as a lieutenant. Once they make lieutenant commander, flow points to commander and captain will be as they have been historically.

- **Involuntary Separations:** A most unpleasant happening to say the least, but with no other choice available at the time. I must also note that the use of the IRAD (Involuntary Release from Active Duty) is a tool which has long been used by every other community in the Navy. Only recently have we had to turn to it in an effort to maintain balance in our grade structure, and ensure continued accessions of new officers.

At the same time, realizing that IRADs could only be used in the case of reserve officers, not only did we drop the promotion opportunity for lieutenant commander to 70 percent, but we also dropped promotion opportunity for lieutenant to 90 percent.

This action will cause increased numbers of lieutenant junior grades and lieutenants to be separated as a result of a total peer comparison. Because the process does not discriminate between regular and reserve officers, it will increase the losses in both categories, and in the long run should permit us to reduce IRADs.

As you can see, the Corps is shrinking but the job is not! It doesn't take much imagination to see that we will have more junior officers being assigned to jobs now held by more senior people. Having seen first-hand the quality of our people, I am confident that we will meet every challenge and, working together, exceed the very high expectations of our Navy and of ourselves. We have a quality corps, top to bottom, and it is not only an honor, but a lot of fun leading you.

B. F. Montoya

BENJAMIN F. MONTOYA
Rear Admiral, CEC, USN
Commander and
Chief of Civil Engineers

New road built in Iceland using gabion technique: initial reviews look good!

By LT(JG) KEVIN AVOLIS, CEC, USNR
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A new method of road stabilization is being tested by the Navy in Iceland. Although gabion construction, a form of construction which uses either plastic or galvanized cages and fill material as a substitute for large quantities of fill material, has been used for many years in the United States for slope reinforcement, retaining walls, and coastal structures, it has never been used in Iceland.

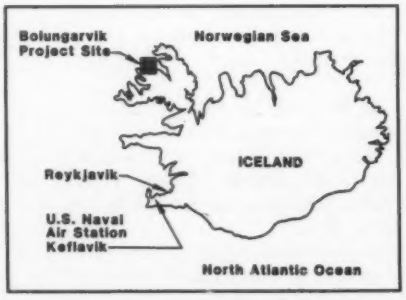
The Atlantic Division, Naval Facilities Engineering Command, issued a contract to Iceland Prime Contractor to construct a 3.5-kilometer road in Northwest Iceland, using the gabion technique. Now complete, the road climbs to an elevation of 626 meters and provides access to a radar station which is currently under construction. Portions of the road required stabilization; the use of plastic gabions was selected as an alternative to excessive amounts of fill material.

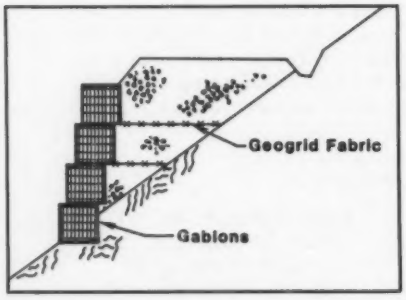
A 75-meter test section was constructed to verify the feasibility and cost benefits of gabion construction in Iceland. The gabions were used in conjunction with a geogrid material. Together they provided lateral resistance to the forces created by the weight of the road. Proven to be cost-effective, the gabion technique was extended to portions of the access road where mountain slopes were as steep 45 degrees. In sections of the road, fill quantities were nearly halved by the use of the gabions. In extreme areas, gabions reached a height of 13 meters.

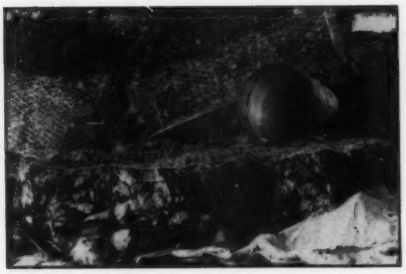
Iceland Prime Contractor trained its personnel in gabion construction by constructing a gabion wall in the town of Bolungarvik. The town plans use the training wall to stabilize one section of a road, currently under construction.

With the use of gabions, the need for constant slope maintenance and stabilization is eliminated. Additionally, maintenance of the gabion structure is minimal; where galvanized gabions are used, maintenance may become necessary if oxidation causes the gabions to fail.

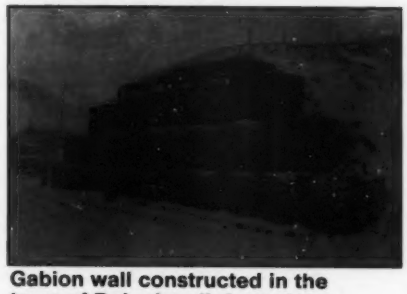
There are additional costs that must be taken into account when considering the use of gabion construction.







Gabion spillway under construction at outlet of culvert.



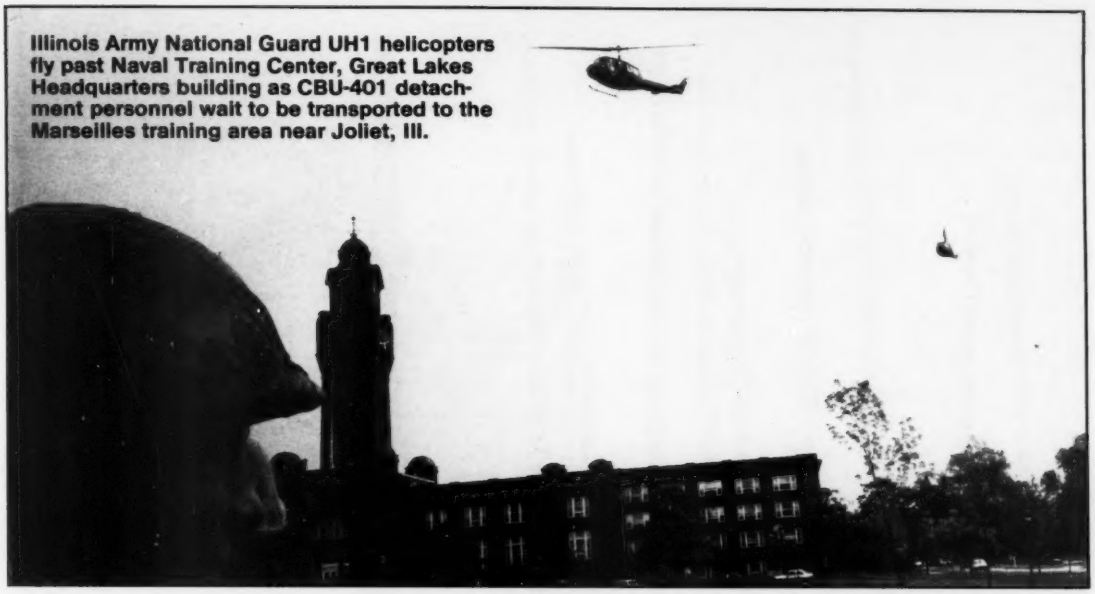
Gabion wall constructed in the town of Bolunbarvik for training purposes.

A processed fill material of specified sizes must be used for gabion structure. Too large a stone will cause excess voids and instability; too small a stone will slip between the wire openings in the gabion cage. Special handling is necessary to prevent deformation of the cage. Front-end loaders are commonly used for this task.

Not only is gabion construction being used for road stabilization, but it is also being used to stabilize culvert spillways. The application establishes a more efficient spillway. The gabions act as a retardant, greatly reducing the erosive forces of mountain water. Water flows easily through the gabion cages. For greater efficiency, a layer of geofabric is placed under the gabion spillway to trap silty material.

As with the use of gabions for road stabilization, the spillway application also reduces the quantity of fill material required. Gabions have been substituted for concrete-filled bags. This technique seems to be a cost-efficient substitute as well.

The access road was completed in August 1987, with the use of approximately 2,000 gabions and at a total cost of nearly $3 million. It appears from initial reviews that gabion construction has proven to be an effective and cost-efficient alternate form of road stabilization in Iceland. □



Illinois Army National Guard UH1 helicopters fly past Naval Training Center, Great Lakes Headquarters building as CBU-401 detachment personnel wait to be transported to the Marseilles training area near Joliet, Ill.

Operation MINIFEX

Mission completed!

By LT RANDALL G. ORTGIESEN, CEC, USNR
Officer in Charge
Naval Construction Battalion Unit 401
Great Lakes, Ill.

and

RUTH BETH
Public Affairs Specialist
Navy Public Works Center
Great Lakes, Ill.

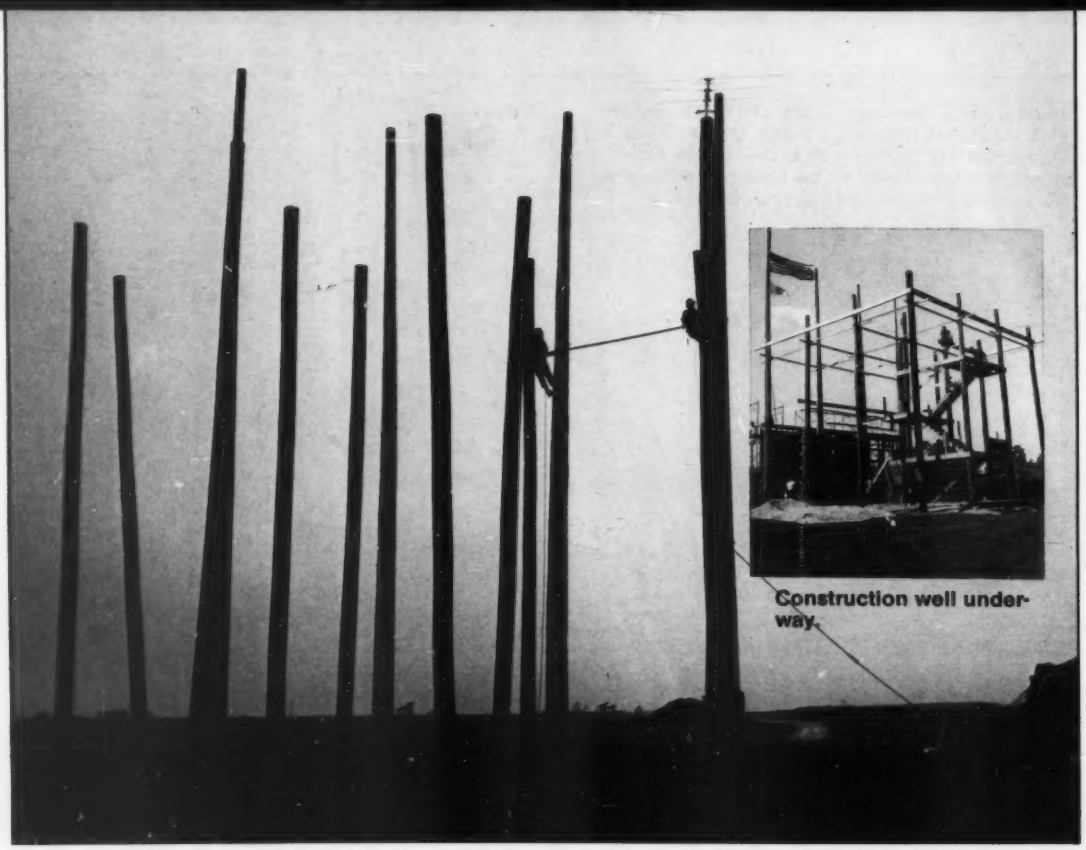
The skill and military readiness of today's building/fighting men at Great Lakes would surely please their 12th Regiment (public works) forefathers who provided the means to construct facilities here for the rapidly growing training station during World War I. An outstanding operation—Mini-Field Exercise (MINIFEX)—was completed in early October by a 20-member crew from Construction Battalion Unit (CBU) 401.

Their mission was to deploy to Joliet, Ill., occupy a portion of the Marseilles training area, and construct an air assault tower, defend the job site against aggressor force, and return to headquarters on schedule. Offensive forces would be armed with small arms, light machine guns, and mortar capability.

The morning of Phase I of the three-phase operation came September 20. At 6:00 a.m. a three-man advance party was deployed to transport tools, seabags, and support equipment via 10-ton stake truck. Remaining detachment personnel departed at 10:00 a.m. by way of Illinois Army National Guard UH1 helicopters.

Upon arrival at the pre-designated camp site, a defensive perimeter was set and an inventory of pre-staged material and tools was made while another crew set up camp and the petty officer in charge reported for intelligence and security briefings.

During the next 11 days the camp was defended successfully against various offensive tactics



Construction well underway.

Standing guard like ancient monoliths, Seabees begin construction on the heavy-timber air assault tower.

employed by the aggressor forces; all the while, a heavy timber air assault tower measuring 38 feet by 41 feet by 32 feet was being constructed.

Requested by the Illinois Military and Naval Department, this Seabee support was to provide a structure to be used as a training facility for Illinois Army National Guard, U.S. Army, State Police, and FBI personnel. The tower frame consisted of 18-inch-diameter poles on 13-foot centers tied together with 2-inch by 10-inch bracing.

A four-tiered, 32-foot staircase provided access to a top deck of 2-inch by 6-inch decking on 4-inch by 10-inch joists. Three of the four sides were left open for open-air rappelling with the fourth side covered with two-by-sixes on 2-inch by 10-inch studs. Trap doors and crawl spaces were constructed to allow special unit training on the tower.

The completely successful field exercise provided a complete and usable training facility for its requestors. But it also provided a great opportunity for CBU-401; the opportunity to deploy a crew to plan, coordinate, and execute the primary mission of the Naval Construction Force — contingency construction. The entire crew received classroom training and were able to familiarization fire the M-203 grenade launcher and M-60 machine gun.

Additionally, several personnel qualified on the 45-caliber pistol and M16A1 rifle as a direct result of being afforded the opportunity to train on the Weaponeer Rifle Simulator. □

Seabees' camp set, they are ready to defend their job site against aggressors.

Aerial view of the MINIFEX camp and construction site.

BUCN Brian Smith is almost to the top of the rappelling wall.

Weapons classroom training. The weaponeer rifle sumulator is in background through door.

Weapons firing range.

73 complete basic training at CECOS

Seventy-three members of basic class No. 184 graduated on March 4, 1988, from the Naval School, Civil Engineer Corps Officers, Port Hueneme, Calif. The class completed eight weeks of specialized training pertinent to the Navy's needs for shore installation engineering, public works management, and Seabee operations.

Ten graduates finished with honors: Lt. Robert J. Gibbs was the outstanding graduate. Nine graduated with distinction. They were: Lt. Dan L. McNally, Lt. Christopher J. Honkomp, Lt. Julius C. Washington, Lt. (j.g.) George E. Taylor, II, Ens. William B. Barclay, Ens. Ronald D. Gruzesky Ens. Raymond G. Houle, Ens. Steven P. Math, and Ens. Michael G. Morrow.

Lt. Gibbs' photograph is indicated by and (•), and those graduating with distinction are indicated by a (●). Those entering Seabee duty are indicated by a (†).

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Continued on Page 31

Developing a family housing maintenance specification

By DENNIS J. LEE

East Bay Municipal Utility District
Oakland, Calif.

In 1980, the Naval Facilities Engineering Command (NAVFAC) undertook a novel approach to the development of guide specifications which are used in the preparation of facility support contracts. Previously, specification writers were using the prescriptive method to specify the quality of the finished product. This meant spelling out in complete and thorough detail the methodology to be used by the contractor in accomplishing the work. The presumption was that if the contractor followed precisely the methodology, the desired level of quality would be achieved.

Specification writers were instructed to convert over to the performance method of specifying. Under the performance method, the specifications need only state the standards that the finished product must comply with. The contractor has the flexibility to select whatever methodology to use so long as the finished product meets the specified standards. Since the contractor is considered to be the expert in performing the work, the contractor is assigned not only supervisory but managerial responsibilities as well for the work.

The government is to assume a "laissez-faire" attitude and be concerned with only the end-result and not with the intermediate steps. This new concept meshed well with the NAVFAC policy of preference for use of firm-fixed price contracts to minimize risks and costs of contract administration to the government.

A new term was introduced for these types of specifications—"performance work statements." One of the first guide performance work statements to be developed by NAVFAC was family housing maintenance. It was adopted for use by Public Works Center (PWC), San Francisco, in 1983. With the exercising of all available options, the contract, which was awarded under sealed bidding, lasted for a total of three years.

When it came time to readvertise the contract, PWC San Francisco decided not to reissue the performance work statement as it then existed, but to revise the performance work statement incorporating lessons learned. What follows is a discussion of the significant revisions made to the family housing maintenance guide performance work statement as originally developed by NAVFAC.

Work Reception. To conform with the concept of assigning managerial responsibility to the contractor, the original performance work statement required the contractor to have a reception desk to field telephone calls from housing tenants who wanted to report deficiencies that were in need of repair.

Since the government was no longer in charge of the reception desk, it had to depend upon the contractor to perform important record-keeping and job classification functions and to trust the contractor with fostering cour-

teous and diplomatic customer relations.

Experience at PWC San Francisco indicated that this arrangement was less than satisfactory. Opportunities existed for the contractor to misrepresent information and data to his or her own advantage, and to create a perception of hostility towards the housing tenants in the manner of its handling of customer service. To restore control of the situation, the revised performance work statement has eliminated the requirement for the contractor to operate the reception desk. The function has been transferred back to the government.

Service Calls. Service calls can be classified into two distinct categories. The first category is service calls arising from equipment malfunctioning—"equipment service call." The second category is service calls arising from normal wear and tear of the physical plant "non-equipment service call." Experience has shown that a direct correlation exists between the number of equipment service calls generated and how well preventative maintenance is performed.

If preventative maintenance is performed on a regularly scheduled basis, one would expect the number of equipment service calls to be low and infrequent. If preventative maintenance is performed haphazardly, one would expect the number of equipment service calls to increase substantially. It is difficult, however, to isolate factors that have a direct influence on the number of non equipment service calls to be generated.

The original performance work statement did not differentiate between equipment and nonequipment service calls. The contractor was required to submit a bid to respond to all service calls under a firm-fixed price. Historical information was provided to enable the contractor to determine the bid amount. Since the number of service calls was not constant from year to year, a prudent contractor would also have to include a reasonable contingency.

In the interest of fairness, it was felt that the circumstances did not lend to pricing under a firm-fixed price basis. The revised performance work statement has been restructured such that only equipment service calls are bid on a firm-fixed price, since, to a great extent, the contractor is in control of the number of equipment service calls generated by the way preventative maintenance is performed. The firm-fixed price motivates the contractor to keep down the number of equipment service calls by doing a fine job with preventative maintenance.

Because of the unpredictable nature of nonequipment service calls, they are to be bid on a unit-price, indefinite-quantity basis. Since the contractor will be paid for the accomplishment of every single nonequipment service call, the risk associated with quantity variation is eliminated; therefore, it is possible for the contractor to bid a lower price for the work than under a firm-fixed price scenario. For similar reasons, change of occupancy work and appliance replacement have been converted from firm-fixed price to unit price indefinite quantity.

An argument can be made that an accounting nightmare has been created by requiring so many items to be bid under a unit-price, indefinite-quantity basis. The quantity of work ordered and actually accomplished have to be reconciled each month before payment to the contractor can be processed. It is the author's opinion that it

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is in the government's interest to resolve any differences at the end of each month rather than having to react if and when the contractor files a claim at the end of the contract. With the advent of minicomputers, the accounting chore has become less cumbersome.

Technical Requirements. The original performance work statement utilized standards rather than methodology to describe the technical requirements of the work. In many instances, specification writers had a difficult time coming up with meaningful standards and so, as an act of compromise, phrases such as "pleasing appearance" and "structually sound" were used instead.

These standards were subject to various interpretations because they were subjective in nature and not amenable to measurement. Consequently, it was not surprising that disagreements developed between the government and the contractor over whether or not the completed work met the specified standards.

To enhance enforceability, the revised performance work statement has removed all references to ambiguous standards and replaced them with detailed descriptions of work methods. No one has said that prescriptive and performance methods of specifying have to be mutually exclusive. It is possible for a performance work statement to contain both methods, just so the ground rule that only one method is used to describe a particular work requirement is strictly followed.

Minor Work. The original performance work statement provided only for the accomplishment of preventative maintenance, service calls, change of occupancy work, appliance replacements, and painting. Any other work to be assigned to the contractor had to be negotiated as a contract modification. This arrangement hampered timely response to the repairing of deficiencies which had been reported by the housing tenants.

To alleviate the problem, the revised performance work statement has provided for the accomplishment of minor work which is defined to be work in excess of the scope of a service call. Minor work can be ordered on a unit price or time and material basis. Unit prices can be developed for recurring items of work; i.e., countertop replacement and wood-floor sanding. Nonrecurring work items can be ordered on a time and material basis up to a maximum of $25,000 per work order.

The reader should not conclude that the author is advocating that every existing housing maintenance performance work statement incorporate the changes as discussed. Indeed, there have been situations in which the performance work statement as originally developed by NAVFAC has worked well. The greatest success has been found when the performance work statement was used in conjunction with the source selection method of procurement rather than with sealed bidding. The reason for this is that the source selection process, unlike sealed bidding, permits the government to evaluate the contractor's staffing and to conduct discussions prior to contract award.

What the author does advocate is that specification writers invest time to carefully evaluate the activity's circumstances and understand the procurement method to be employed before proceeding with tailoring the family housing maintenance or any other guide performance work statement. □

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Cannonballs found at old Gun and Shot Park (photo circa 1900) during new construction. — Page 16

CBU-401 show readiness of today's fighting men in mini field exercise at Great Lakes.

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WESTDIV gets involved in ski lift work.

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